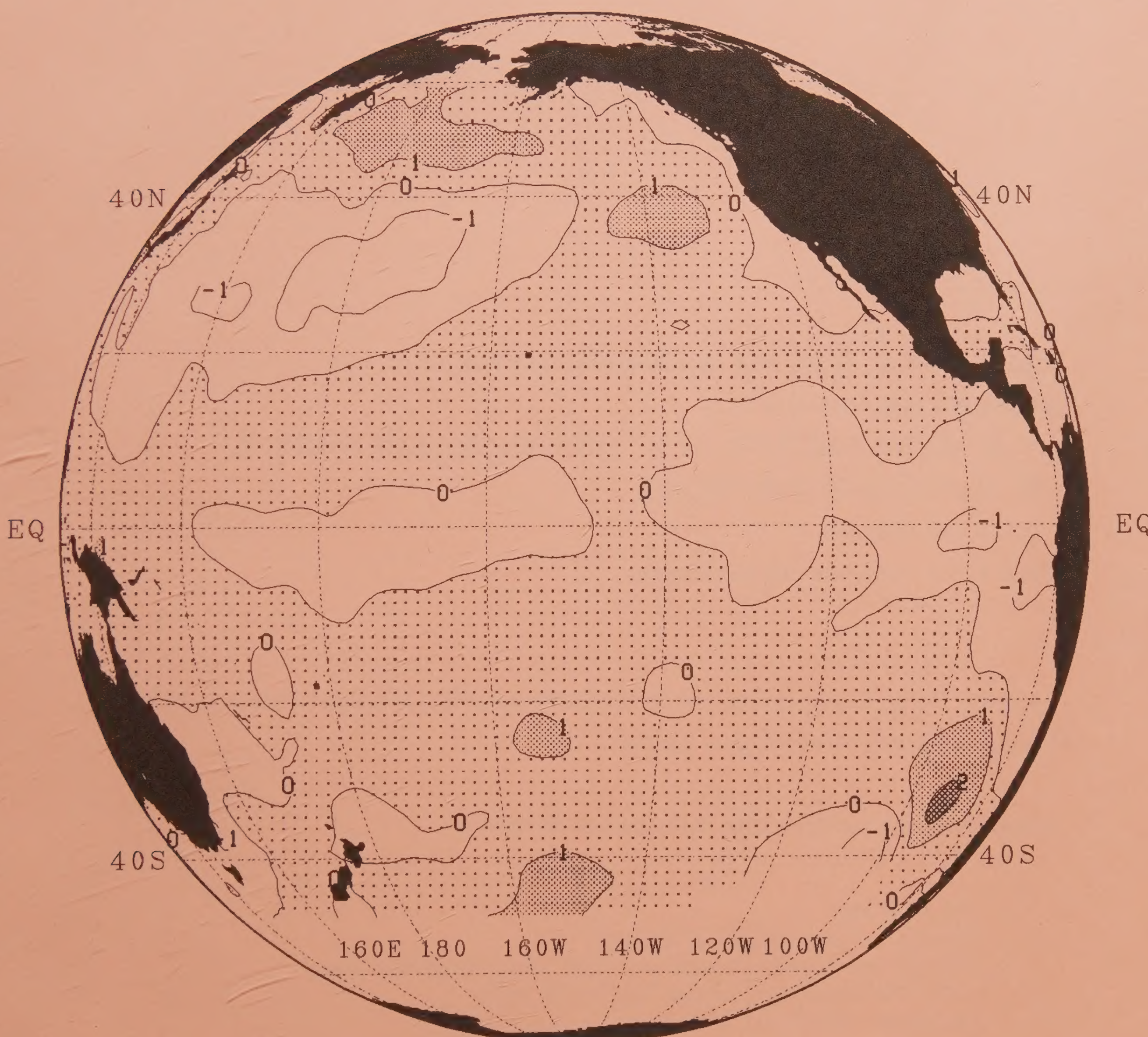
気象庁海洋月報

Monthly Ocean Report

November 1996 (No. 47)



Climate and Marine Department
Japan Meteorological Agency

気象庁 気候・海洋気象部

平成8年11月

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本月報に関する問い合わせは、

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表紙は、1996年11月の太平洋の月平均海面水温偏差図です。
陰影部は、平年より高温の海域を示しています。

The figure on the front cover shows the monthly mean SST anomalies for November 1996 in the Pacific Ocean.
Areas of positive anomalies are shaded.

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海況の特徴（1996年11月）

太平洋の海況

太平洋赤道域の110°W以東には-0.5℃以下の負偏差が広がった。エルニーニョ監視海域（4°S～4°N、150°W～90°W）の海面水温偏差は、前月と同じく-0.3℃だった。一方、西部熱帯域では、平年より0.5℃以上高い海域が1年以上にわたって継続して見られるが、その範囲は前月より狭くなった（第1表、第1図、第6図）。

太平洋の赤道に沿った表層水温断面図によれば、前月に引き続き、水温躍層付近で西部では正偏差、東部では負偏差が見られた（第9図）。

150°Eから150°Wにかけての20～40°Nでは、-0.5℃以下の負偏差域が広がり、特に30°Nの日付変更線付近では平年より1℃以上低かった。一方、北米大陸西岸沖の40°N,140°W付近と、カムチャツカ半島から160°Wにかけての50°Nに沿って、平年より1℃以上高かった（第6図）。

日本近海の海況

太平洋岸では全域で正偏差となり、常磐沖では平年より1℃以上高かった。東シナ海には、1℃以上の正偏差が大きく広がった。日本海はほぼ平年並だった（第24図）。

黒潮は、九州から紀伊半島にかけて接岸して流れ、遠州灘から関東にかけて蛇行していた。11月上旬には、黒潮は八丈島付近まで南下し、伊豆諸島付近を北上していたが、中旬には八丈島の南を経て伊豆諸島の東を北上する流路となった。日本の東方では、ほぼ35°Nに沿って東に流れていた（第27図）。

本州東方の親潮系の冷水は、沿岸寄りの分枝は41.5°N,143.1°Eまで、沖合の分枝は39.1°N,146.3°Eまで、それぞれ達していた（第26図）。

熱帯の気象

対流活動は120°E～140°Eの海洋大陸付近とフィリピン付近で平年より活発である一方、中部赤道太平洋では不活発であった。200hPaでの大規模な発散中心はカリマンタン島からニューギニア島の北にかけて存在し、平年より約20度西に偏っていた。850hPaでの赤道上空の風は太平洋全域で東風偏差が卓越する一方、インド洋から海洋大陸付近では西風偏差が見られた。海面気圧はインド洋東部から太平洋中部の負偏差と太平洋東部の正偏差という東西シーソーパターンが持続しているが、南方振動指数（SOI）は9か月ぶりに平年並（0.0）になった（第1表、第3～5図、第12図）。

HIGHLIGHTS November 1996

Pacific

In the equatorial Pacific, negative sea surface temperature (SST) anomalies lower than -0.5 °C dominated east of 110°W. The SST index for region B (Fig. 1) was -0.3°C, the same as in October. On the other hand, SSTs more than 0.5°C above normal continued to be observed in the western tropical Pacific. However, the SST index for region D (Fig. 1) was +0.3°C, and the areal extent of more than 0.5°C above-normal SST during November was much reduced compared to that observed in October (Table 1, Figs. 1 and 6).

Positive subsurface temperature anomalies continued along the thermocline in the western equatorial Pacific, while negative anomalies in the eastern equatorial Pacific (Fig. 9).

Negative SST anomalies lower than -0.5°C prevailed between 20°N and 40°N from 150°E to 150°W. In particular, negative SST anomalies lower than -1°C were observed around 30°N, 180°. Positive SST anomalies more than 1°C were found around 40°N, 140°W (off west coast of North America) and along 50°N from the Kamchatka Peninsula to 160°W (Fig. 6).

Seas adjacent to Japan

SSTs were generally above normal along the coast of Japan in the Pacific, especially off Joban where SSTs were more than 1°C above normal. Positive SST anomalies more than 1°C dominated the East China Sea. In the Japan Sea, SSTs were near normal (Fig. 24).

The Kuroshio flowed along the coast of Kyushu and Shikoku, then meandered from off Tokai to Kanto. In the first 10 days of November, Kuroshio reached around Hachijo Island, and went northward along Izu Islands. In the second and third 10 days of the month, it flowed south of Hachijo Island, and went northward east of Izu Islands. East of Japan, it flowed eastward along 35°N (Fig. 27).

Coastal and off coastal branches of the Oyashio cold water extended southward to 41.5°N, 143.1°E, and 39.1°N, 146.3°E, respectively (Fig. 26).

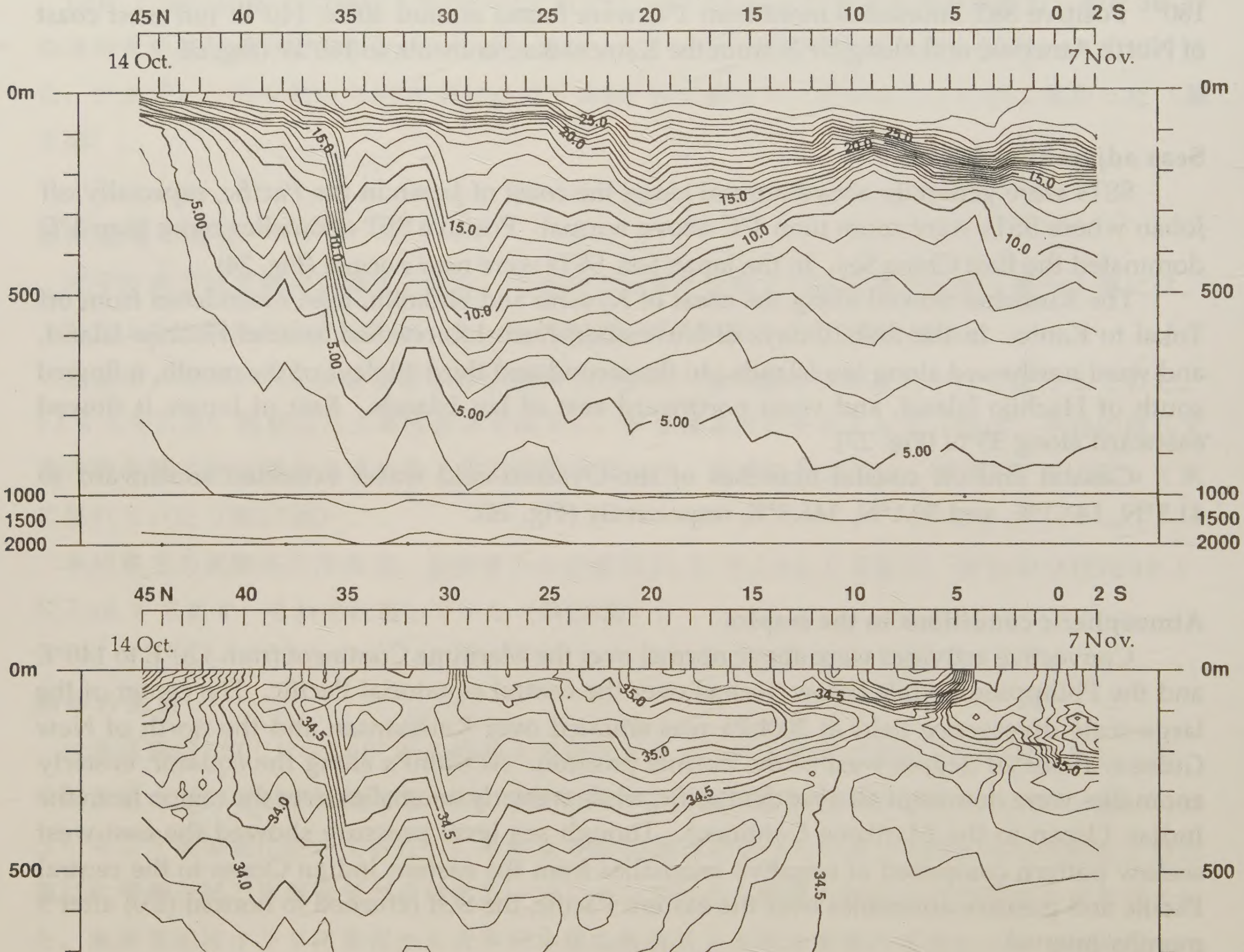
Atmospheric conditions in the tropics

Convective activities were above normal over the Maritime Continent from 120°E to 140°E and the Philippines, while below normal over the central equatorial Pacific. The center of the large-scale divergence field at 200hPa was situated over Kalimantan and the north of New Guinea, about 20 degree west of the normal position. At 850hPa along the equator, easterly anomalies were dominant all over the Pacific, while westerly anomalies over the region from the Indian Ocean to the Maritime Continent. Though sea level pressure showed the east-west seesaw pattern composed of negative anomalies from the eastern Indian Ocean to the central Pacific and positive anomalies over the eastern Pacific, the SOI returned to normal (0.0) after 9 months' interval.

Depth-Latitude Sections of Temperature and Salinity along 165°E

海洋気象観測船「凌風丸」は、平成８年10月９日から12月６日にかけて、東経165度に沿った観測を主とする西太平洋の海洋観測を実施した。この航海では、定期的に実施している海況把握のための観測に加えて、（１）北太平洋中層水の形成機構の解明、（２）北西太平洋における二酸化炭素の挙動の把握、（３）気象研究所の海洋大循環モデルで得られた底層・深層流の検証等を目的としたデータ取得のための観測を行った。

R/V Ryofu Maru of the Japan Meteorological Agency (JMA) carried out the oceanographic observations mainly along 165°E in the western Pacific from 9 October to 6 December 1996. The purposes of this cruise are to monitor the oceanographic conditions and to collect the data to be used for (1) elucidating the mechanism of formation of the North Pacific Intermediate Water, (2) understanding the behavior of CO_2 in the western North Pacific, and (3) verification of the deep and bottom flows obtained by an ocean general circulation model developed in the Meteorological Research Institute of JMA.



図－A　凌風丸による165°Eに沿う水温（上：℃）及び塩分（下：psu）断面図
（観測期間：平成８年10月14日～11月７日）

Fig. A　Depth-latitude sections of temperature (top) and salinity (bottom) along 165°E observed on board R/V Ryofu Maru of JMA from 14 October to 7 November 1996.

DATE	SEA SURFACE TEMPERATURE AND ANOMALY (°C)								SEA LEVEL ANOMALY (cm)					
	Region D 14N-Eq. 130E-150E		Region A 4N-4S 160E-150W		Region B 4N-4S 150W-90W		Region C Eq.-10S 90W-80W		Yap 10N,138E	Rabaul 4S,152E	Majuro 7N,171E	Tarawa 1N,173E	Christ-mas 2N,157W	Santa Cruz 1S, 90W
DEC 95	29.5	+0.6	28.0	-0.2	24.2	-0.7	21.9	-0.7	12.5	16.5	3.3	1.0	-6.8	-4.8
JAN 96	29.0	+0.5	27.9	-0.1	25.0	-0.4	24.1	-0.2	9.2	13.7	7.9	5.5	-2.7	-3.0
FEB 96	28.6	+0.3	27.6	-0.4	25.7	-0.5	26.0	+0.3	9.7	14.0	5.9	4.2	-3.1	6.1
MAR 96	28.8	+0.4	27.8	-0.3	26.7	-0.2	25.9	0.0	8.2	11.8	-3.7	6.1	0.3	1.0
APR 96	29.3	+0.5	28.1	-0.1	26.7	-0.4	24.1	-1.0	-4.4	12.9	5.0	2.6	-2.8	-4.4
MAY 96	29.6	+0.5	28.5	0.0	26.2	-0.4	22.9	-1.0	-8.8	14.2	7.8	7.9	-0.7	-3.7
JUN 96	29.7	+0.4	28.6	0.1	25.7	-0.4	21.5	-1.2	2.5	10.1	4.4	5.1	-0.6	-5.1
JUL 96	29.8	+0.6	28.4	-0.1	25.1	-0.1	20.4	-1.2	12.3	12.9	3.8	1.2	-3.7	-0.2
AUG 96	29.6	+0.5	28.4	0.0	24.3	-0.3	20.5	-0.1	10.5	16.0	8.4	1.5	-1.4	-2.1
SEP 96	29.8	+0.6	28.4	+0.1	24.3	-0.3	19.8	-0.5	13.3	-	14.5	2.4	-7.9	-2.9
OCT 96	29.9	+0.6	28.5	+0.1	24.3	-0.3	20.4	-0.3	14.9	15.9	12.2	0.9	-3.2	-4.3
NOV 96	29.5	+0.3	28.2	-0.2	24.3	-0.3	20.5	-1.0						

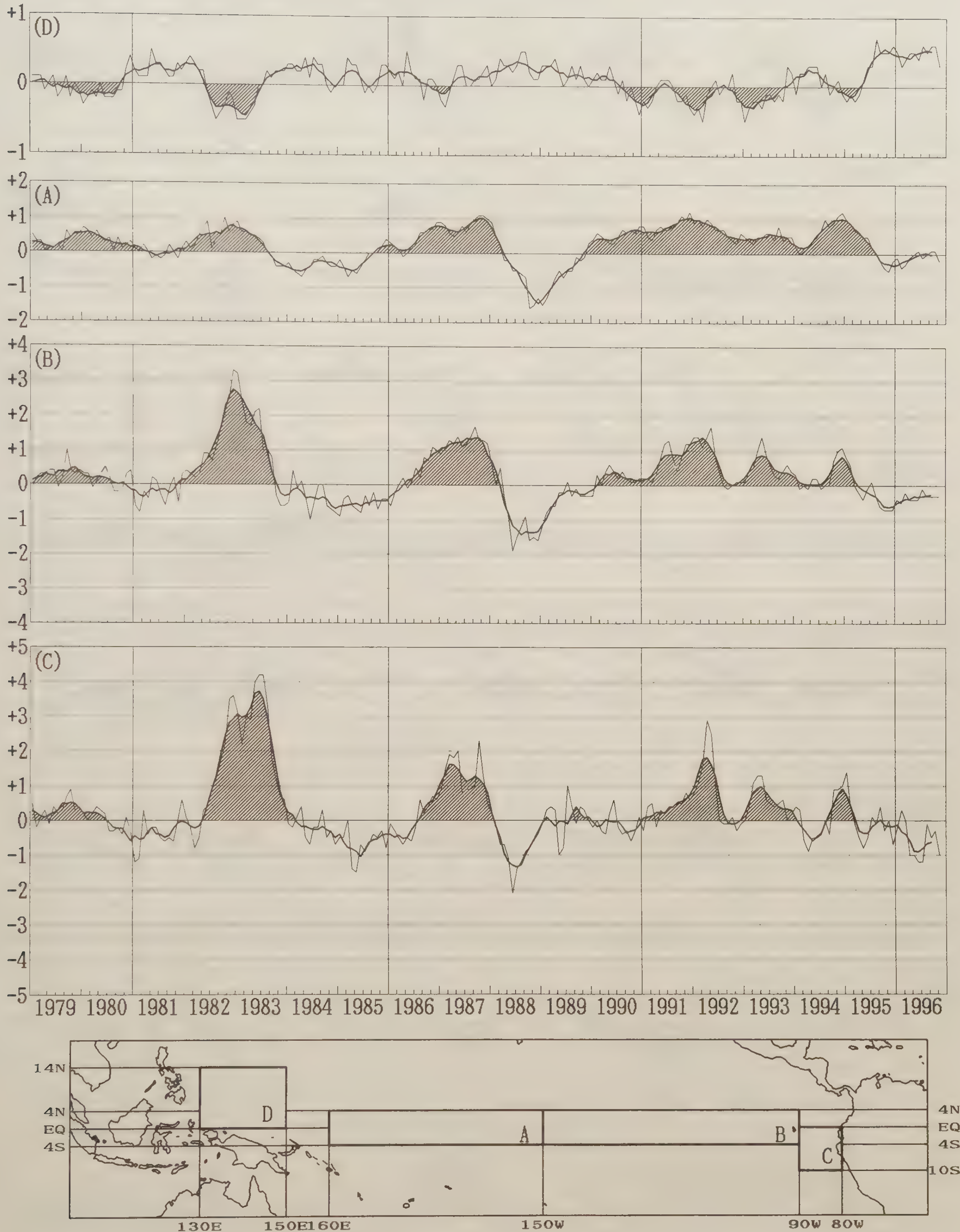
第１表（ａ）　エルニーニョ監視指数

Table 1 (a) El Niño monitoring indices. Data sources are the SOC for ISLP-Pac, Department of Oceanography, University of Hawaii for the sea level anomaly. All the data of sea level anomaly has been revised.

DATE	SOI	SEA LEVEL PRESSURE ANOMALIES		HIGH CLOUD AMOUNT INDEX			EQUATORIAL ZONAL WIND INDEX				
		TAHITI 17°33' S,149°37'W	DARWIN 12°24' S,130°52'E	HCLD-PH 20N-10N 110E-140E	HCLD-MC 5N-5S 110E-135E	HCLD-DL 5N-5S 170E-170W	U200-IN 5N-5S 80E-100E	U200-CP 5N-5S 180 -125W	U850-WP 5N-5S 160E-175W	U850-CP 5N-5S 170W-135W	U850-EP 5N-5S 130W-100W
DEC 95	-0.5	-0.9	0.0	4.0	1.2	-1.2	-0.3	-0.1	-1.0	-0.3	0.3
JAN 96	0.8	1.0	-0.7	1.6	1.5	-1.3	-1.0	0.8	-1.2	-1.2	0.0
FEB 96	0.1	-0.3	-0.5	1.7	1.4	-1.1	-0.7	0.4	-1.1	-1.4	-0.6
MAR 96	0.7	1.0	-0.3	0.3	-0.4	-1.2	-0.2	0.0	-1.1	-1.5	-0.3
APR 96	0.8	0.5	-0.5	2.4	0.6	-0.7	-1.3	1.1	-1.6	-1.1	-0.5
MAY 96	0.3	1.2	1.2	0.6	0.0	-0.6	-1.3	0.8	-1.0	-1.3	0.3
JUN 96	1.4	1.6	-0.2	-1.4	0.4	-0.6	0.8	1.0	-1.4	-2.0	0.5
JUL 96	0.7	0.6	-0.6	0.8	0.1	-0.7	-0.3	1.3	-1.4	-2.1	-0.1
AUG 96	0.4	0.4	-0.3	-1.6	1.0	-0.9	0.9	0.8	-1.3	-1.1	0.3
SEP 96	0.5	-0.7	-1.7	1.7	0.3	-0.9	-2.3	1.2	-1.3	-1.9	0.5
OCT 96	0.4	-0.1	-0.8	-0.3	1.9	-0.8	-2.1	0.9	-1.8	-1.8	0.5
NOV 96	0.0	-0.5	-0.5	2.2	1.0	-0.9	-1.0	0.1	-1.1	-1.4	-0.6

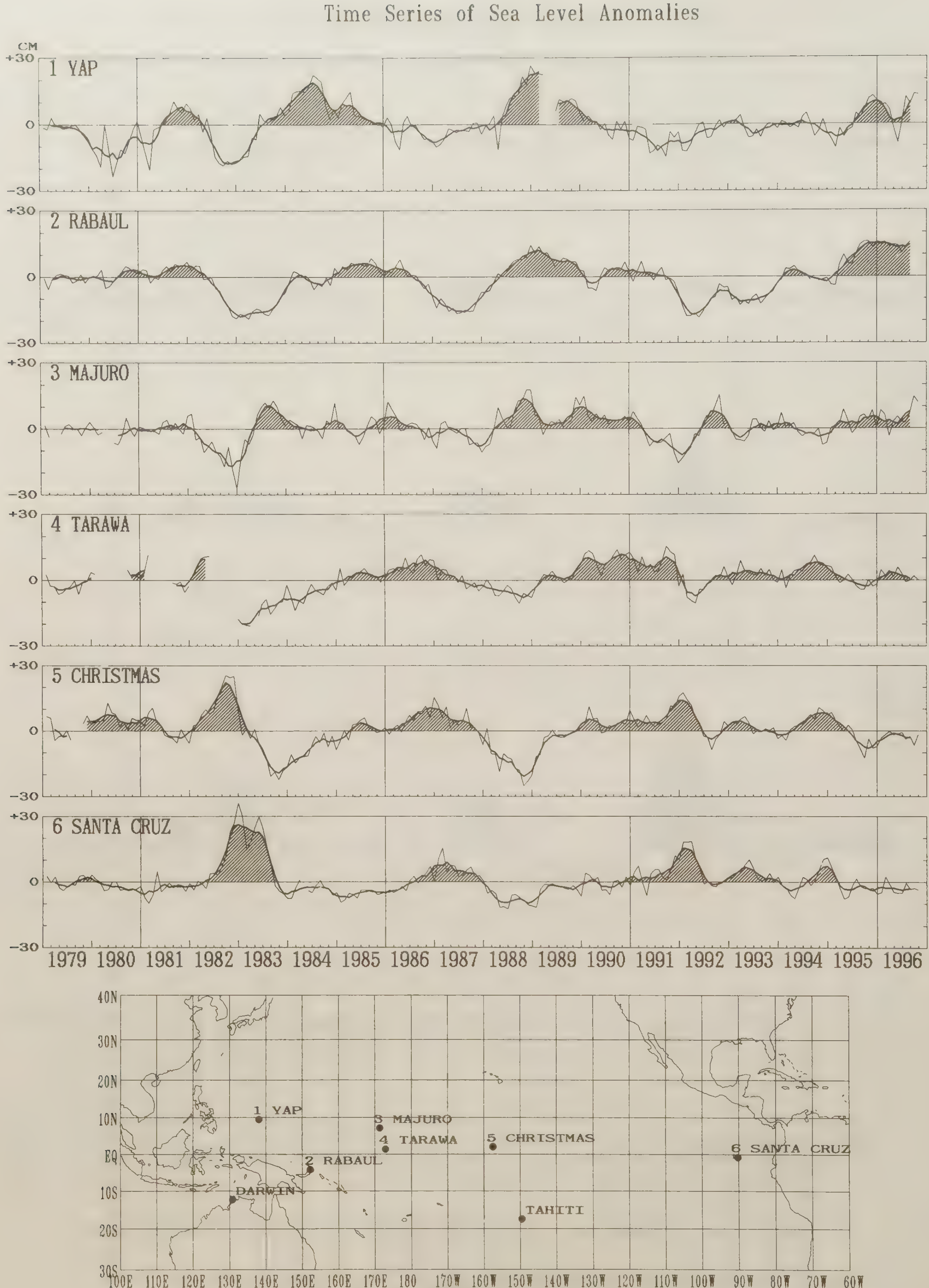
第１表（ｂ）　エルニーニョ監視指数（続き）
Table 1 (b)　El Niño monitoring indices (continued).

Time Series of Equatorial Pacific SST Anomalies



第1図　太平洋赤道域の海面水温偏差時系列図

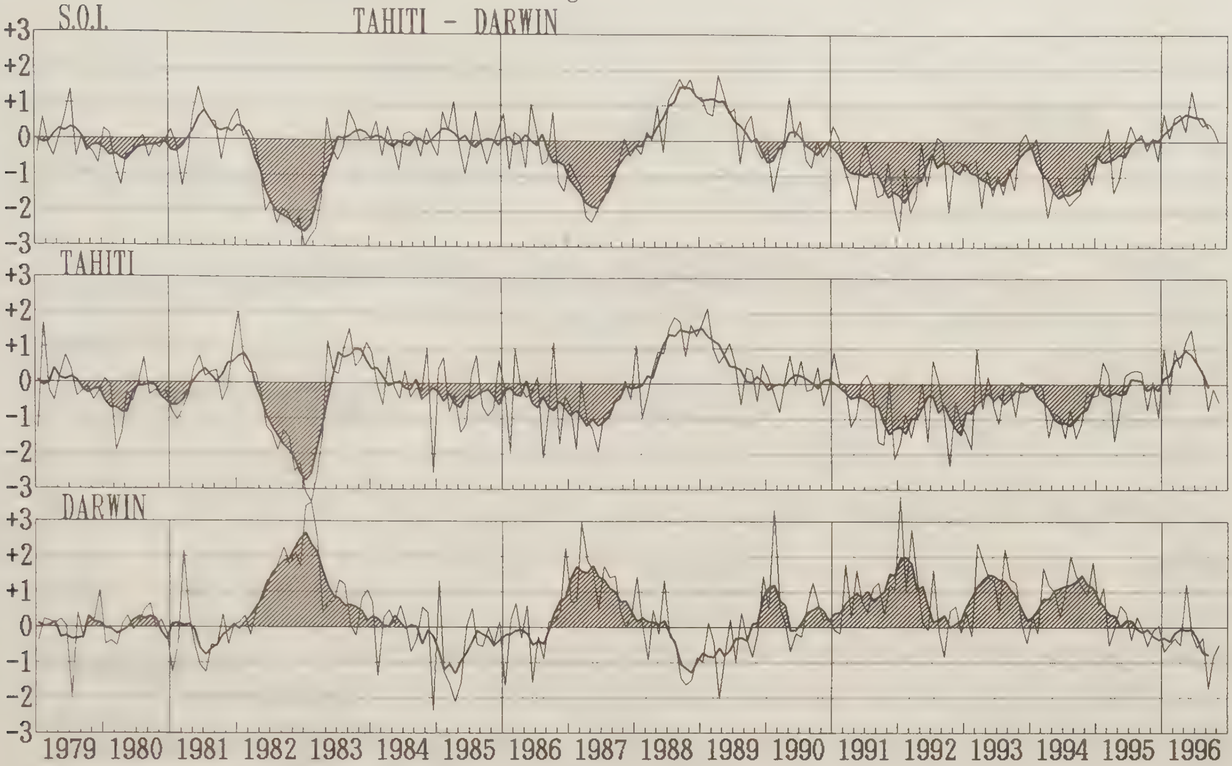
Fig.1 Time series of monthly mean SST anomalies (°C) in the equatorial Pacific Ocean for the areas indicated at the bottom.
Thin lines show the monthly means and thick lines their 5-month running means. Positive anomalies (A, B, C) and negative anomalies (D) are shaded. Anomalies are computed from the JMA climatology (1961-1990).



第2図　太平洋月平均海面水位偏差時系列図

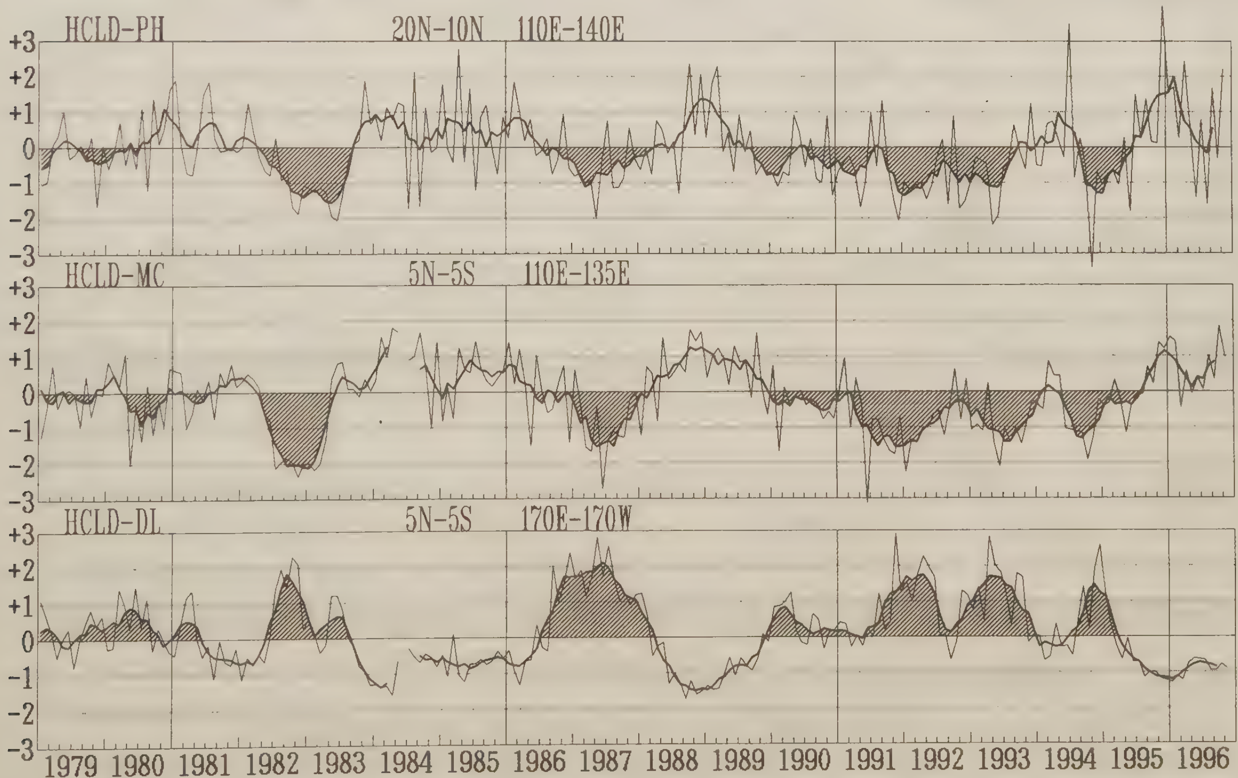
Fig.2 Time series of sea level anomalies computed from 1976-1990 monthly mean values obtained from the stations indicated at the bottom. Thin lines show the monthly mean and thick lines their 5-month running means.　Positive anomalies are shaded.

Time Series of SOI and High-Cloud Amount Index



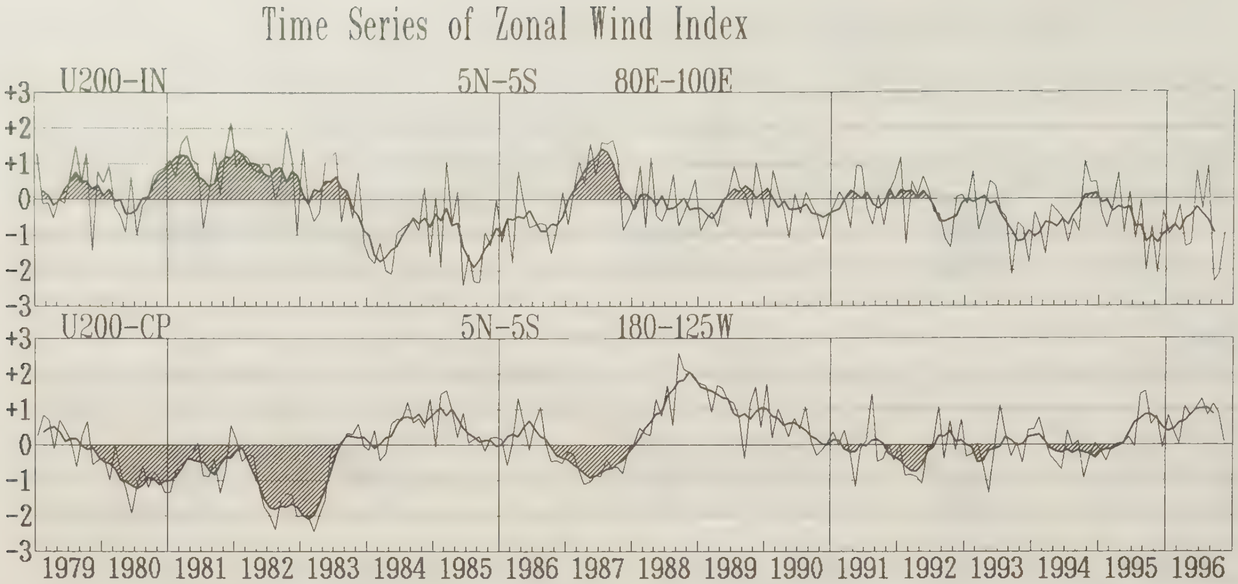
第3図　南方振動指数及び海面気圧偏差時系列図

Fig.3 Time series of the Southern Oscillation Index (top) and monthly mean sea level pressure standardized anomalies at Tahiti (middle) and Darwin (bottom).　Thin lines show the monthly mean and thick lines their 5-month running means.　Negative anomalies (top, middle) and posotive anomalies (bottom) are shaded.　Normals and standard deviations are computed from 1961-1990 base periods.



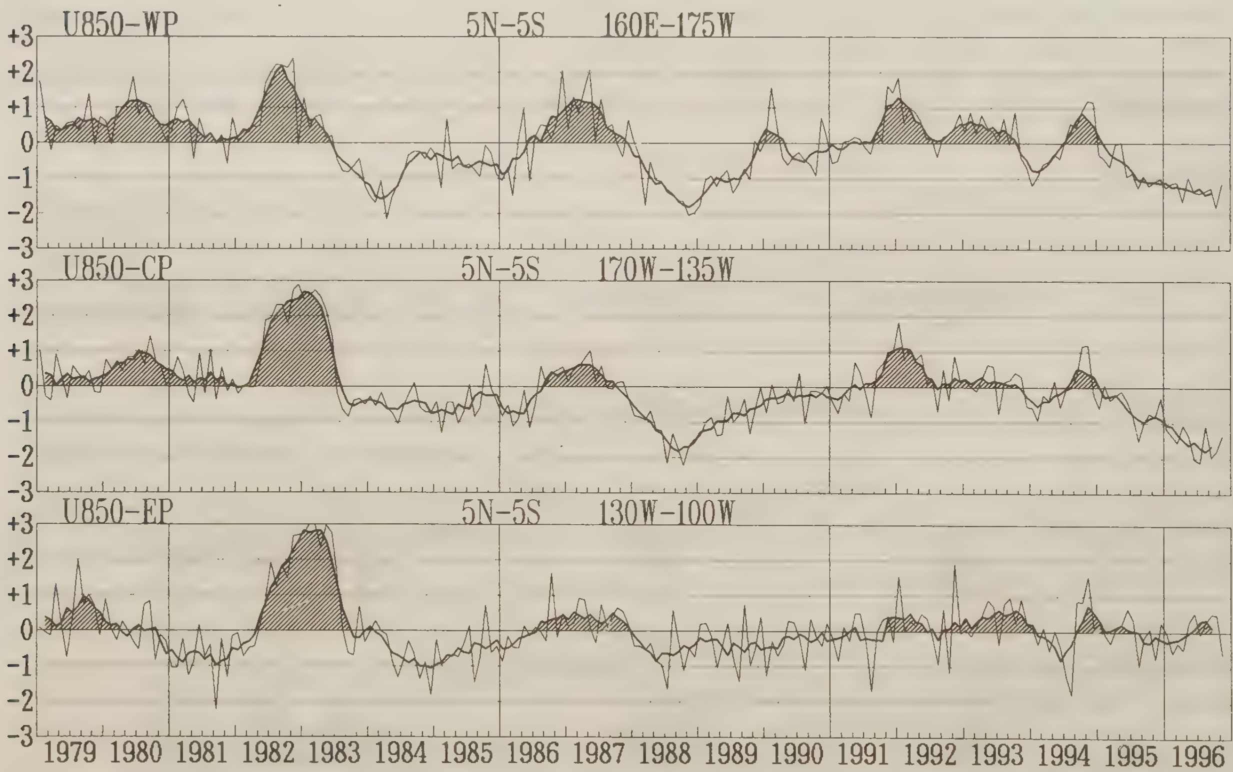
第4図　月平均上層雲量指数時系列図

Fig.4 Time series of high-cloud amount index averaged over the area 20°N-10°N, 110°E-140°E (top), 5°N-5°S, 110°E-135°E (middle), and 5°N-5°S, 170°E-170°W (bottom).　Thin lines show the monthly mean and thick lines their 5-month running means.　Negative anomalies (top, middle) and positive anomalies (bottom) are shaded.　Normals and standard deviations are computed from 1978-1990 base periods.



第5図-1　赤道域東西風指数(200ｈＰａ)時系列図

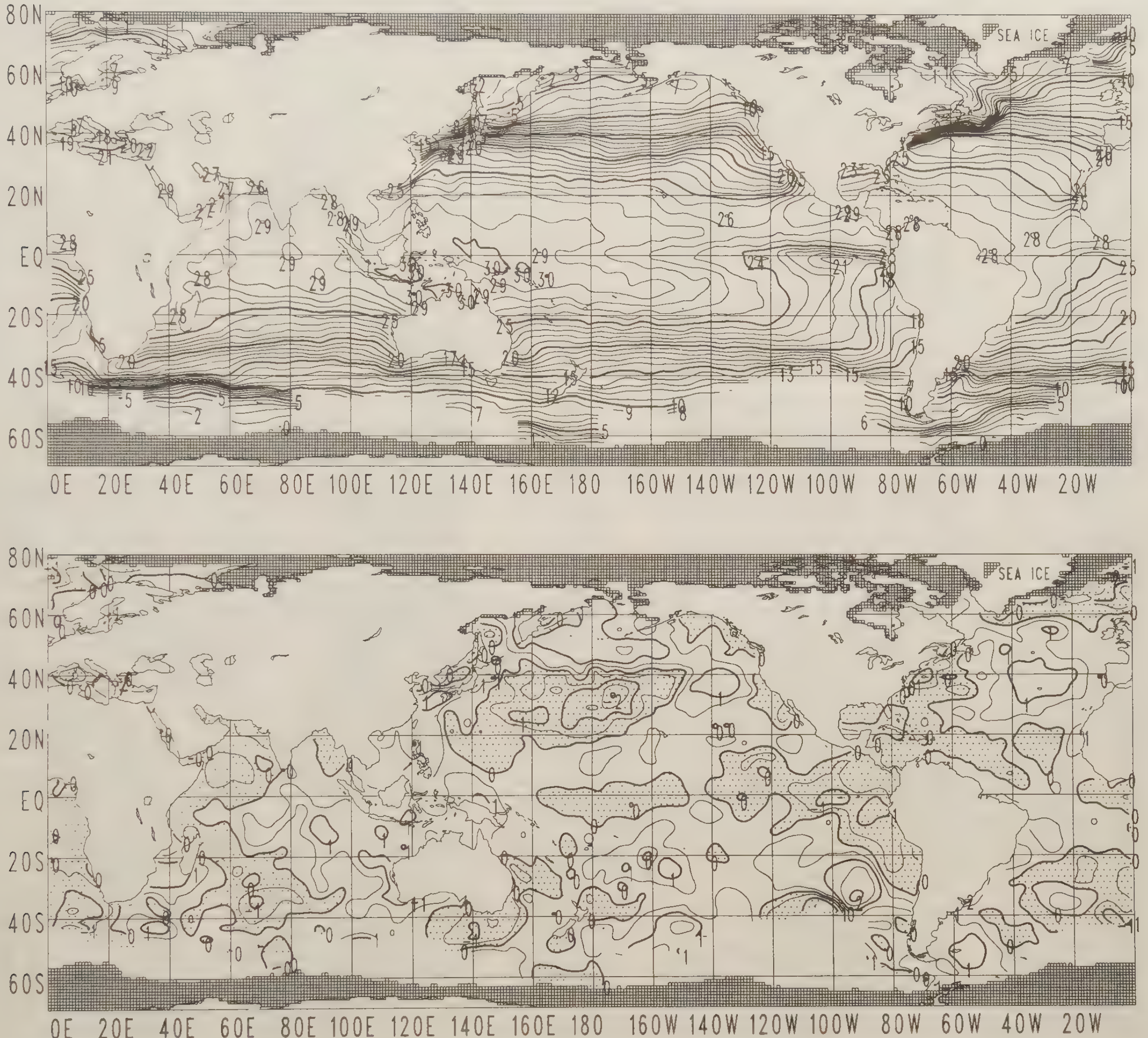
Fig.5-1 Time series of 200hPa zonal wind index averaged over the areas of 5°N-5°S, 80°E-100°E (top), and 5°N-5°S, 180°-125°W (bottom).
Thin lines show the monthly mean and thick lines their 5-month running means.
Positive anomalies (top) and negative anomalies (bottom) are shaded.
Normals and standard deviations are computed from 1979-1990 base periods.



第5図-2　赤道域東西風指数(850ｈＰａ)時系列図

Fig.5-2 Time series of 850hPa zonal wind index averaged over the areas of 5°N-5°S, 160°E-175°W (top), 5°N-5°S, 170°W-135°W (middle), and 5°N-5°S, 130°W-100°W (bottom). Thin lines show the monthly mean and thick lines their 5-month running means. Positive anomalies are shaded.
Normals and standard deviations are computed from 1979-1990 base periods.

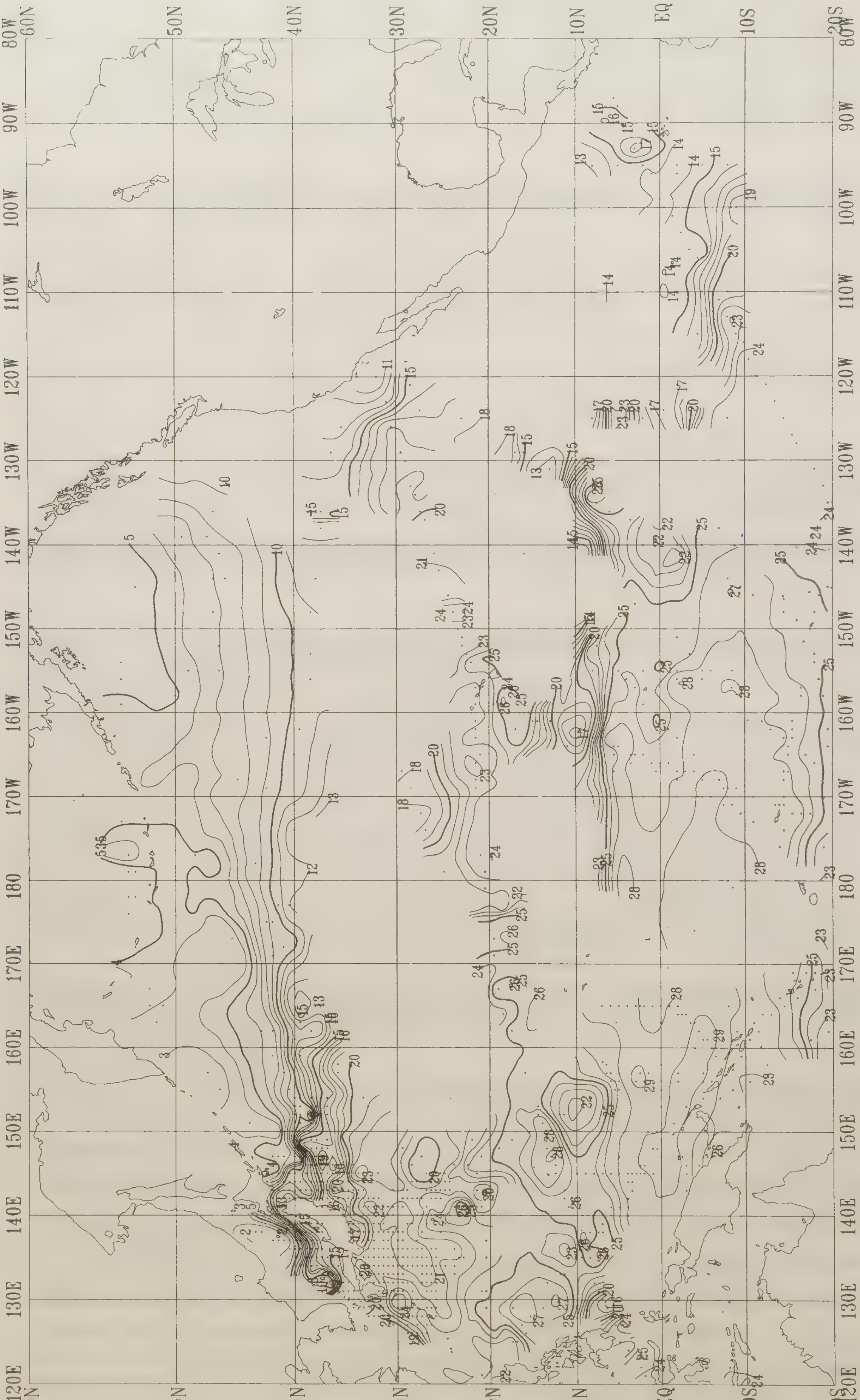
SST & Anomalies in the Global Ocean



第6図　全球月平均海面水温図（上）及び偏差図（下）（1996年11月）

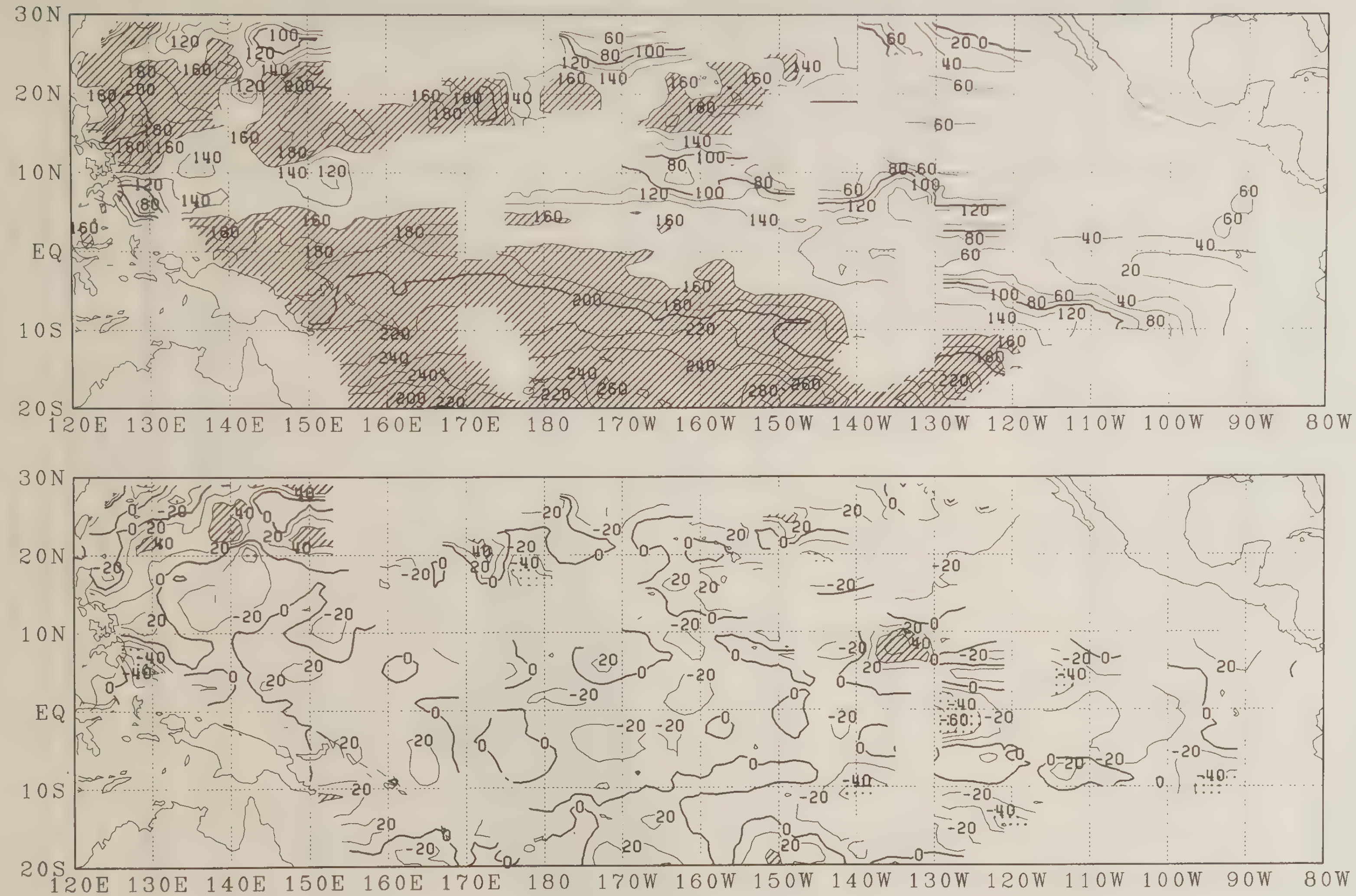
Fig.6 Monthly mean sea surface temperature over the global ocean (top) and anomalies (bottom) for NOV 1996. Anomalies are computed from the JMA climatology (1961-1990) (Marine Department of JMA, 1991, Climatic charts of sea surface temperatures of the western North Pacific and the global ocean). Contour interval is 1°C (top) and additional anomaly contours of ±0.5°C are shown as thin lines. Negative anomalies are spotted. Maximum coverage of sea ice is shaded. Data sources for sea ice are U.S. National Ice Center (polar regions) and JMA (the Sea of Okhotsk).

100m Temperature in the Pacific Ocean



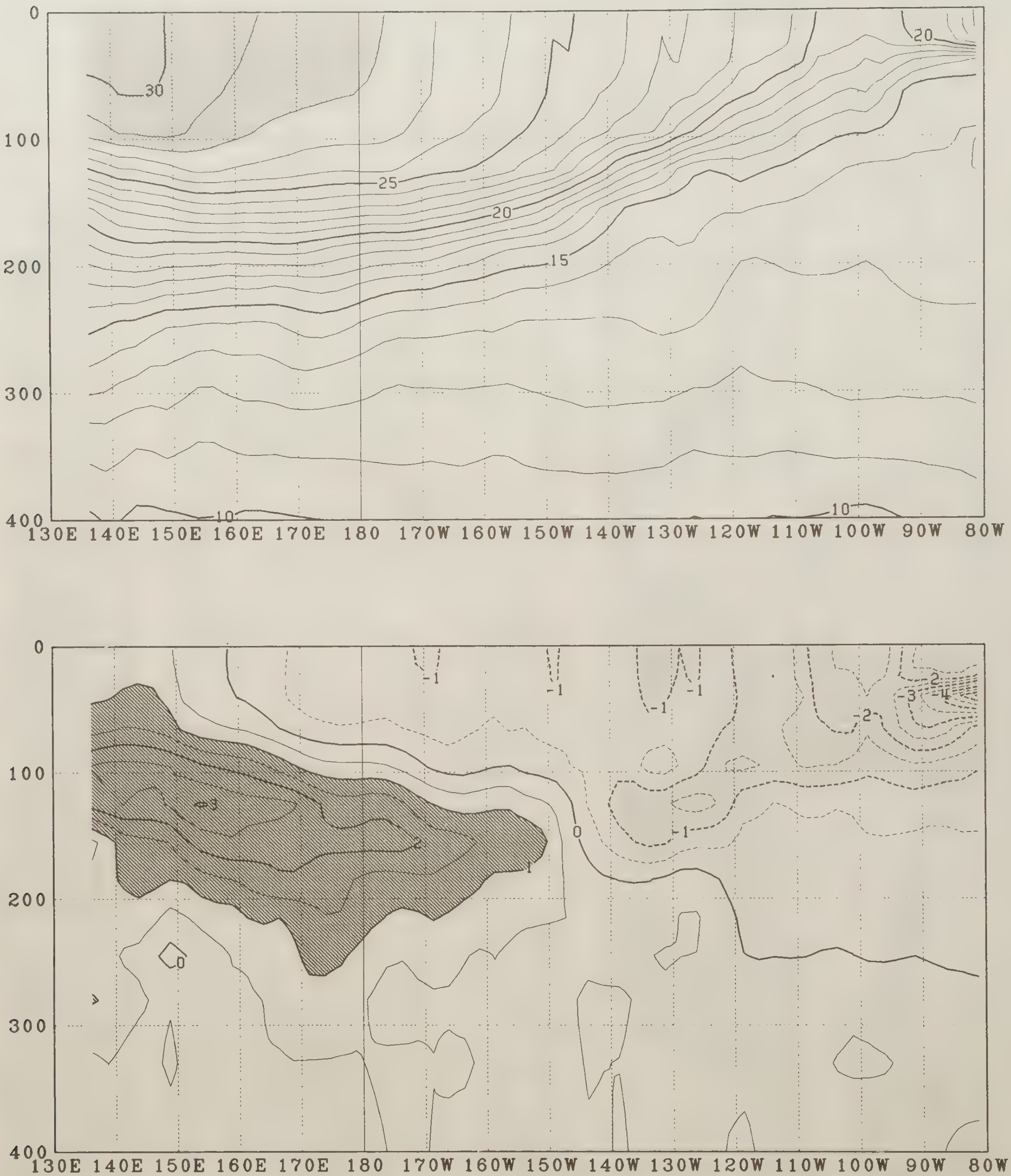
第7図 太平洋表層水温(深さ100m)図 (1996年11月)

Fig.7 Subsurface (100m) temperatures in the Pacific Ocean for NOV 1996.
Contour interval is 1°C. Observation points are denoted by dots.



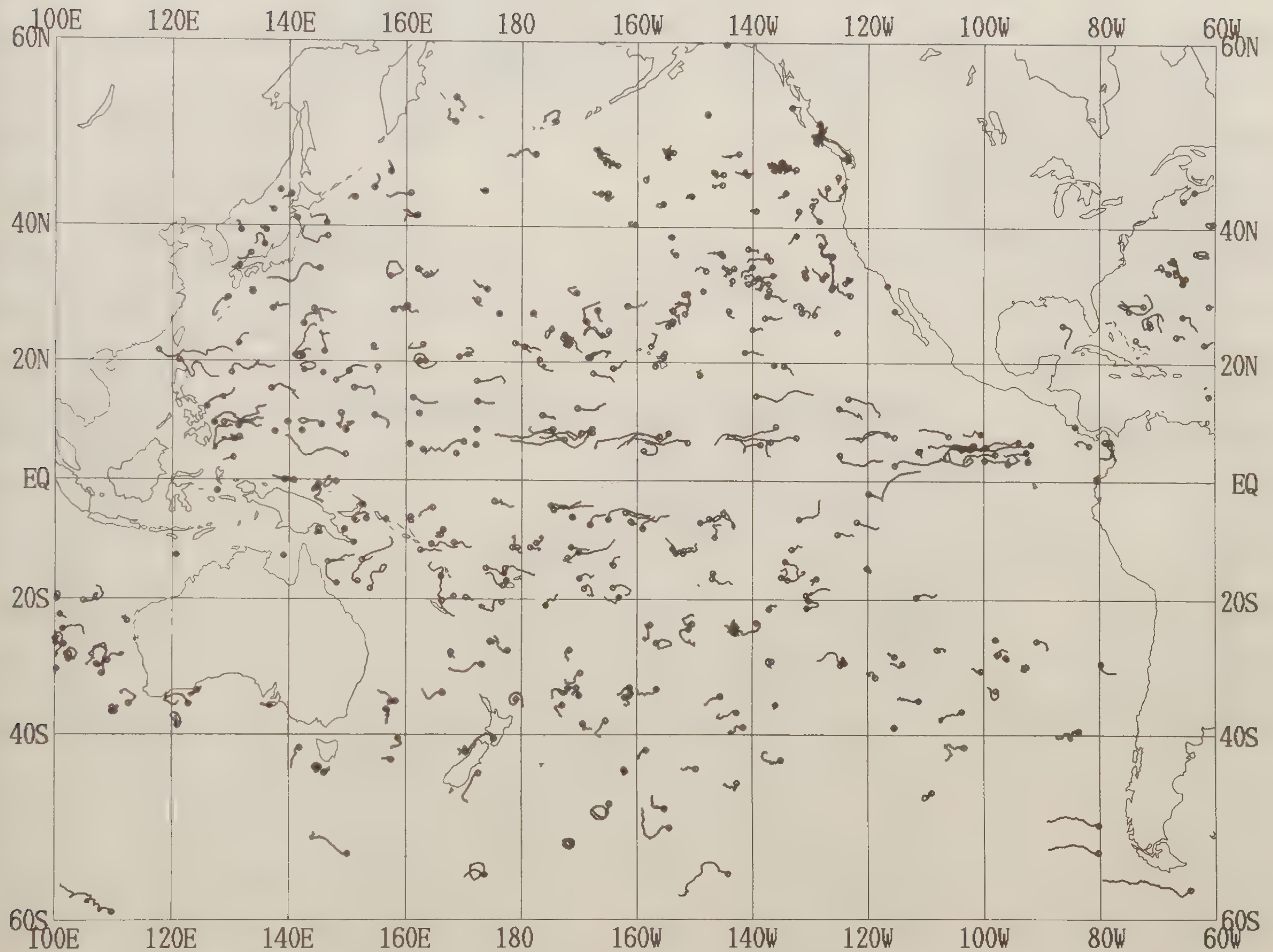
第8図　太平洋20℃深度図（上）及び偏差図（下）（1996年11月）

Fig.8 Depth of the 20°C isotherm in the Pacific Ocean (top) and anomalies (bottom) for NOV 1996. Anomalies are computed from the climatology (Levitus, 1982, Climatological Atlas of the World Ocean, NOAA). Contour interval is 20m. Values greater than 160m in top panel are shaded. In bottom panel values greater than +40m are shaded and values less than -40m are spotted.



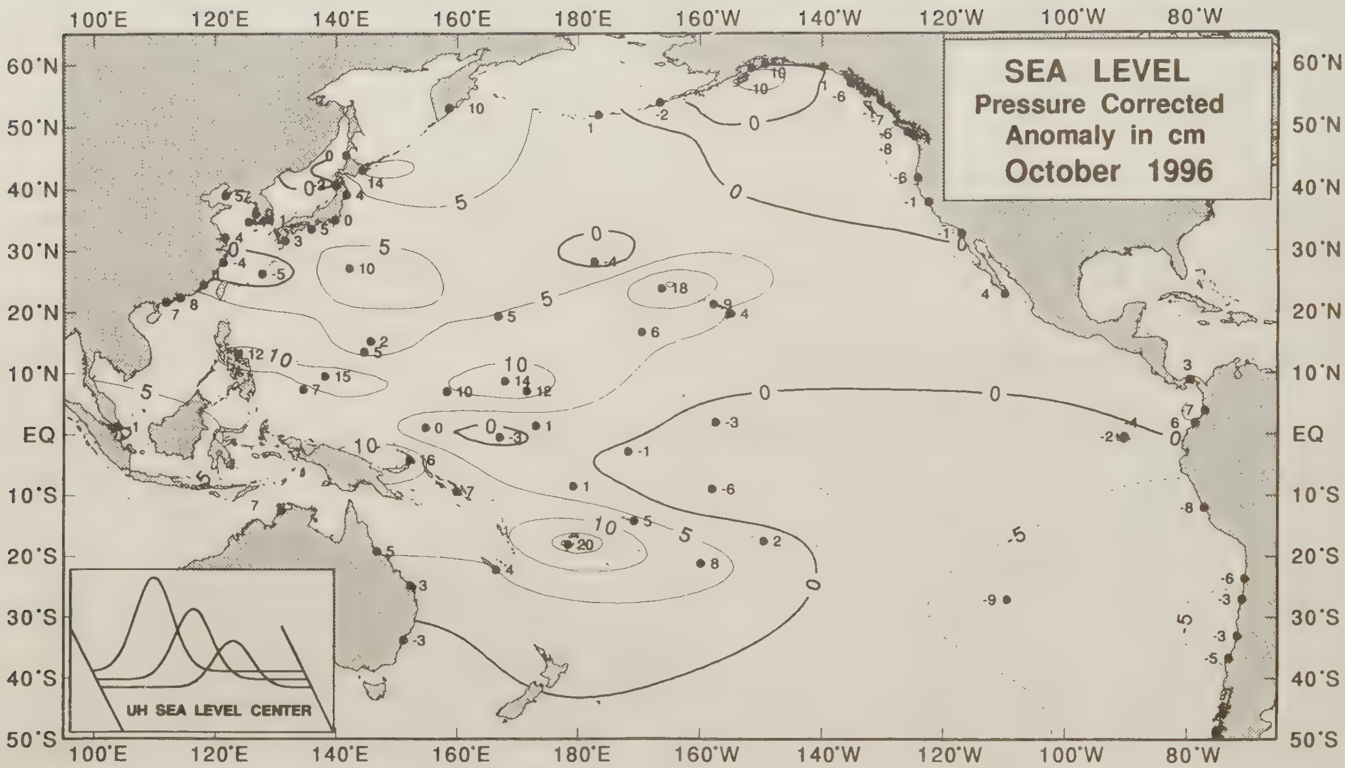
第9図　太平洋赤道に沿う表層水温（上）及び偏差（下）の深度－経度断面図（1996年11月）

Fig.9 Depth-longitude sections of temperature (top) and anomalies (bottom) along the equator in the Pacific Ocean for NOV 1996. Data are derived from the Ocean Data Assimilation System of JMA. Contour interval is 1°C (top) and 0.5°C (bottom). Values greater than 28°C in top panel are shaded. In bottom panel values greater than 1°C are shaded and values less than -1°C are spotted. Anomalies are computed from 1987-1995 base period means.



第10図　太平洋ブイ流跡図(1996年11月)

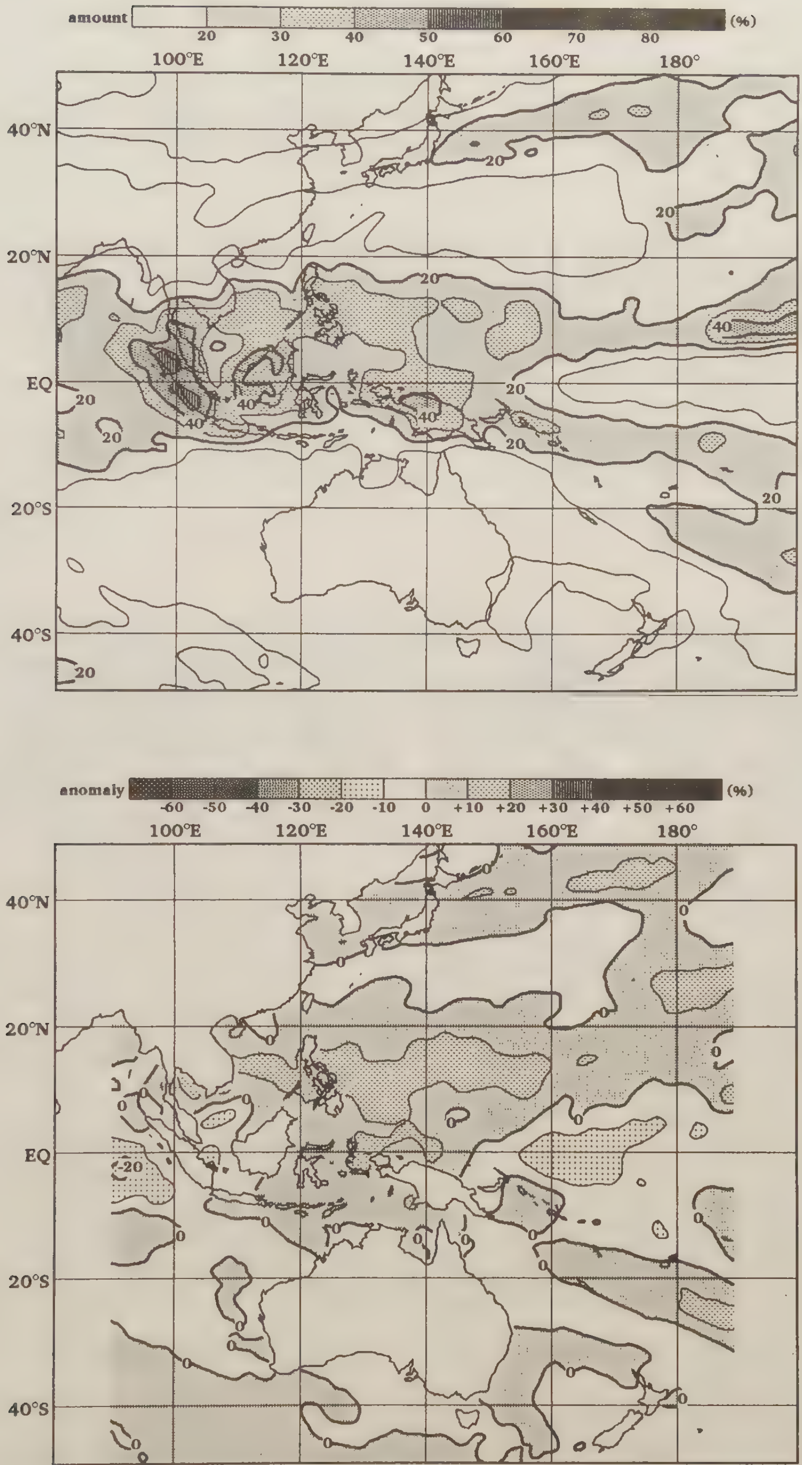
Fig.10 Movements of drifting buoys in the Pacific Ocean during NOV 1996. Each track is for one buoy. Small circles represent last positions for the month.



第11図　太平洋海面水位偏差図（ 1996年10月 ）

Fig.11 Monthly sea level anomalies for OCT 1996 obtained from mean sea level (1975-1986) adjusted for atmospheric pressure.
This figure is prepared by the SOC of ISLP-PAC, Dept. of Oceanography, Univ. of Hawaii.

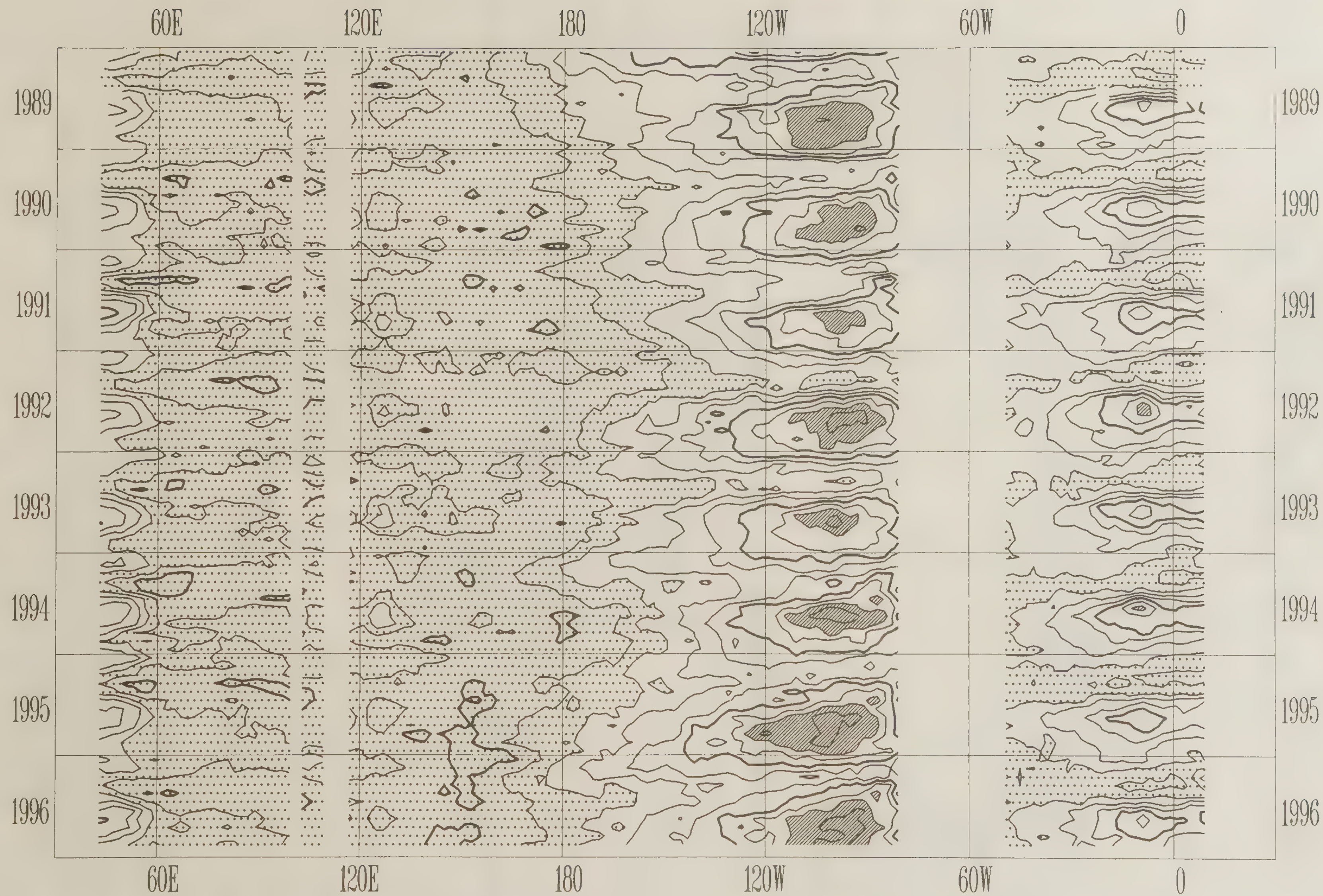
High-Cloud Amount & Anomalies



第12図　西太平洋月平均上層雲量分布図及び偏差図（1996年11月）

Fig.12 Monthly mean of the high-cloud amount (%, top) and its anomalies (%, bottom) in the western Pacific for NOV 1996. Contour interval is 10%. Anomalies are computed from 1978-1990 base period means.

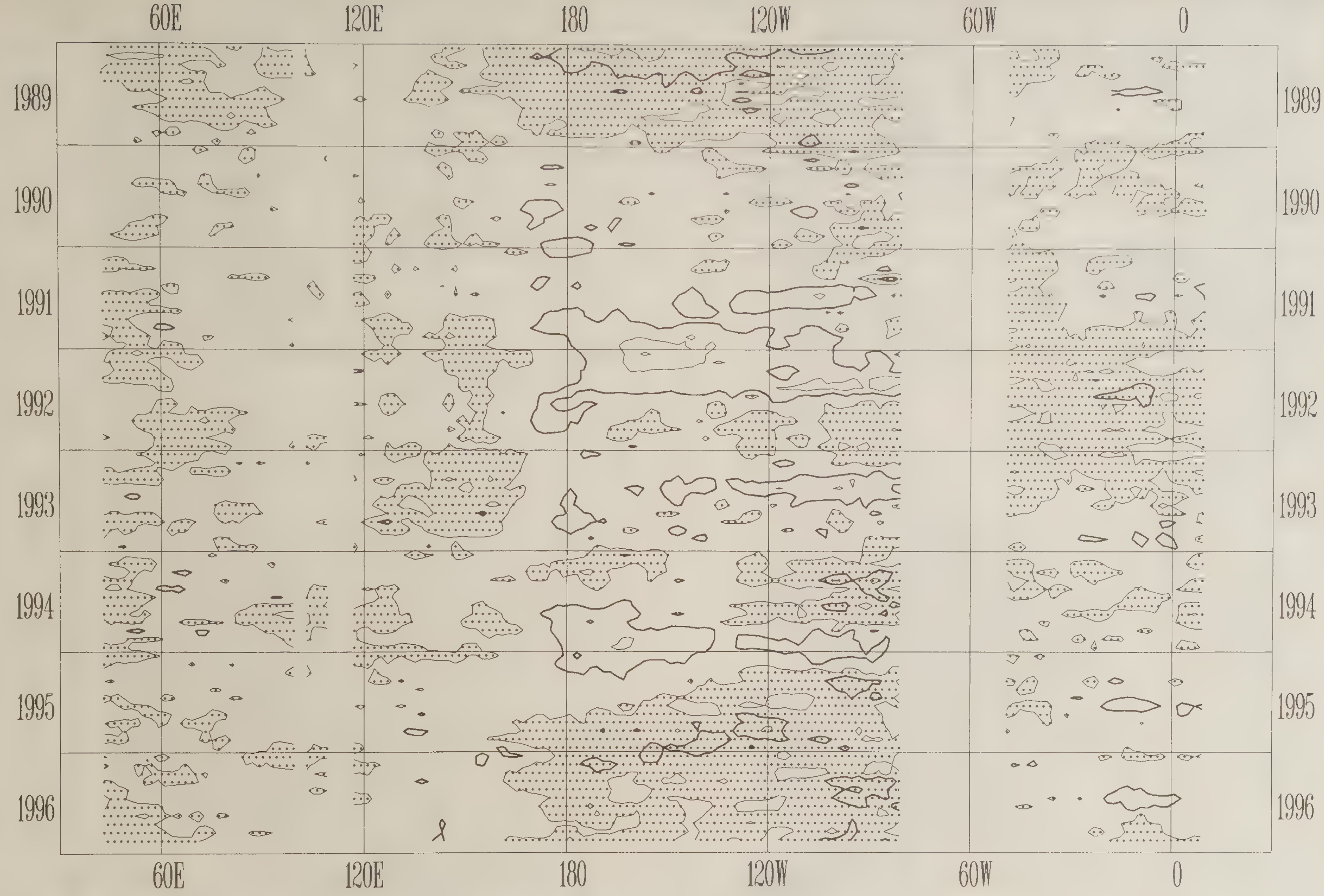
Time-Longitude Section of SST



第13図　赤道に沿う海面水温の時間－経度断面図

Fig.13 Time-longitude section of SSTs along the equator (2°N-2°S) in the global ocean.　Contour interval is 1°C, with thick contour lines at 25 and 30°C. SST values greater than 28°C are spotted and values less than 23°C are shaded.

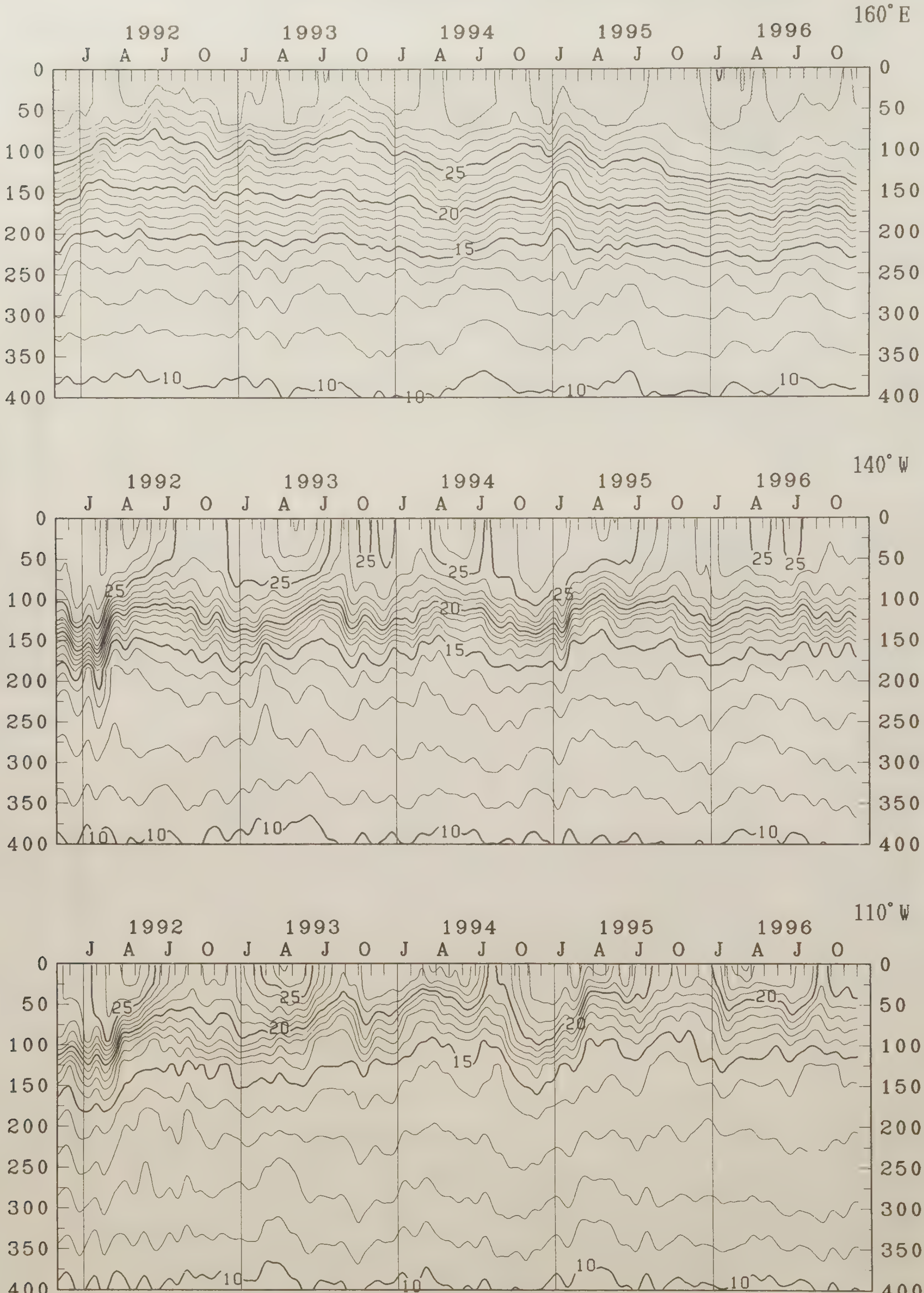
Time-Longitude Section of SST Anomalies



第14図　赤道に沿う海面水温偏差の時間－経度断面図

Fig.14 Time-longitude section of SST anomalies along the equator (2°N-2°S) computed from the JMA climatology (1961-1990). Contour interval is 1°C, with thick contour lines at +1°C and -1°C. Negative anomalies are spotted.

Time-depth Sections of Equatorial Subsurface Temperature

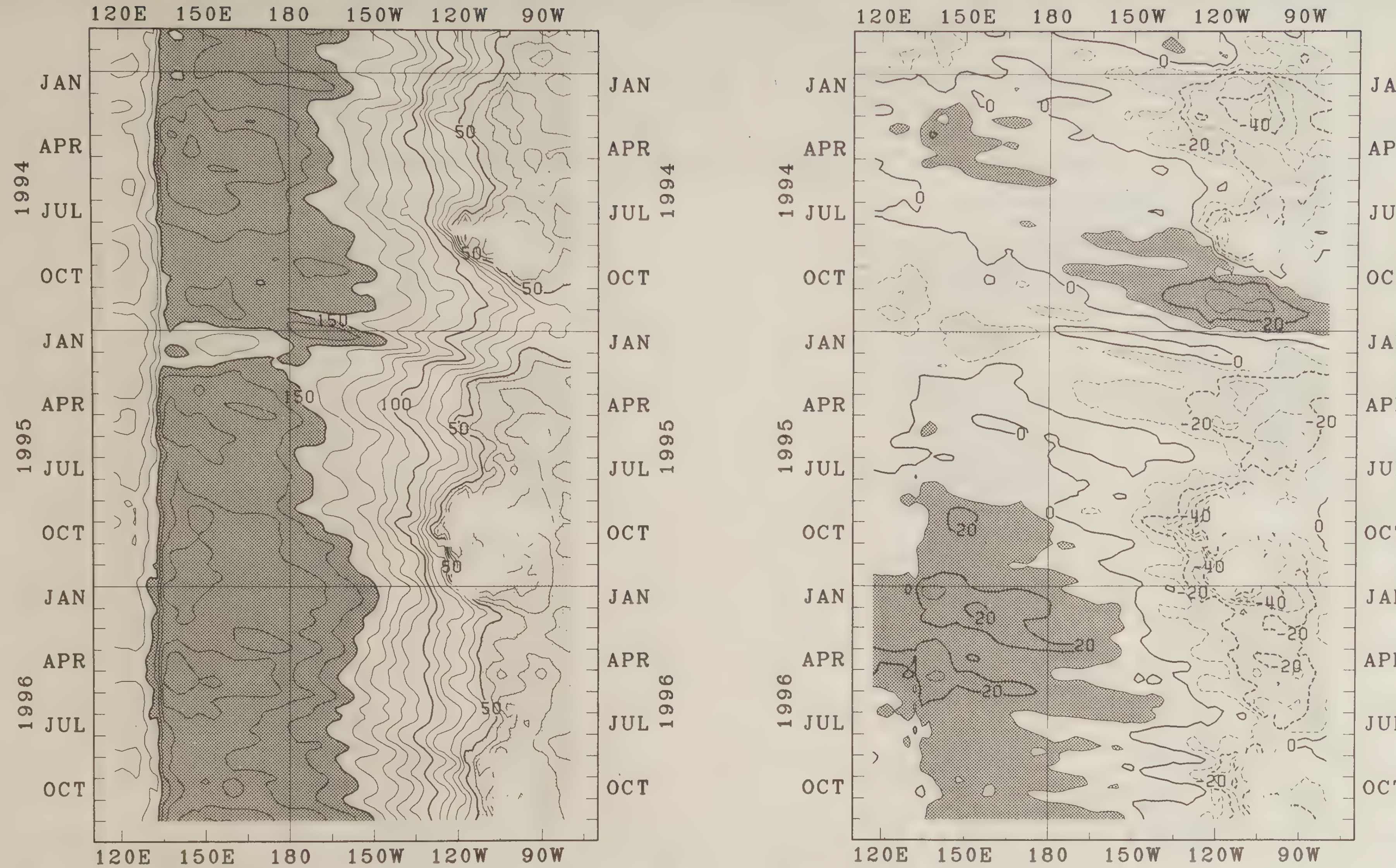


第15図　太平洋赤道域の表層水温の時間－深度断面図

（上：西部、中：中部、下：東部）

Fig.15 Time-depth sections of equatorial subsurface temperature for the western Pacific (top, 160°E), the central Pacific (middle, 140°W) and the eastern Pacific (bottom, 110°W). Data are derived from the Ocean Data Assimilation System of JMA. Contour interval is 1°C. Values greater than 28°C are shaded.

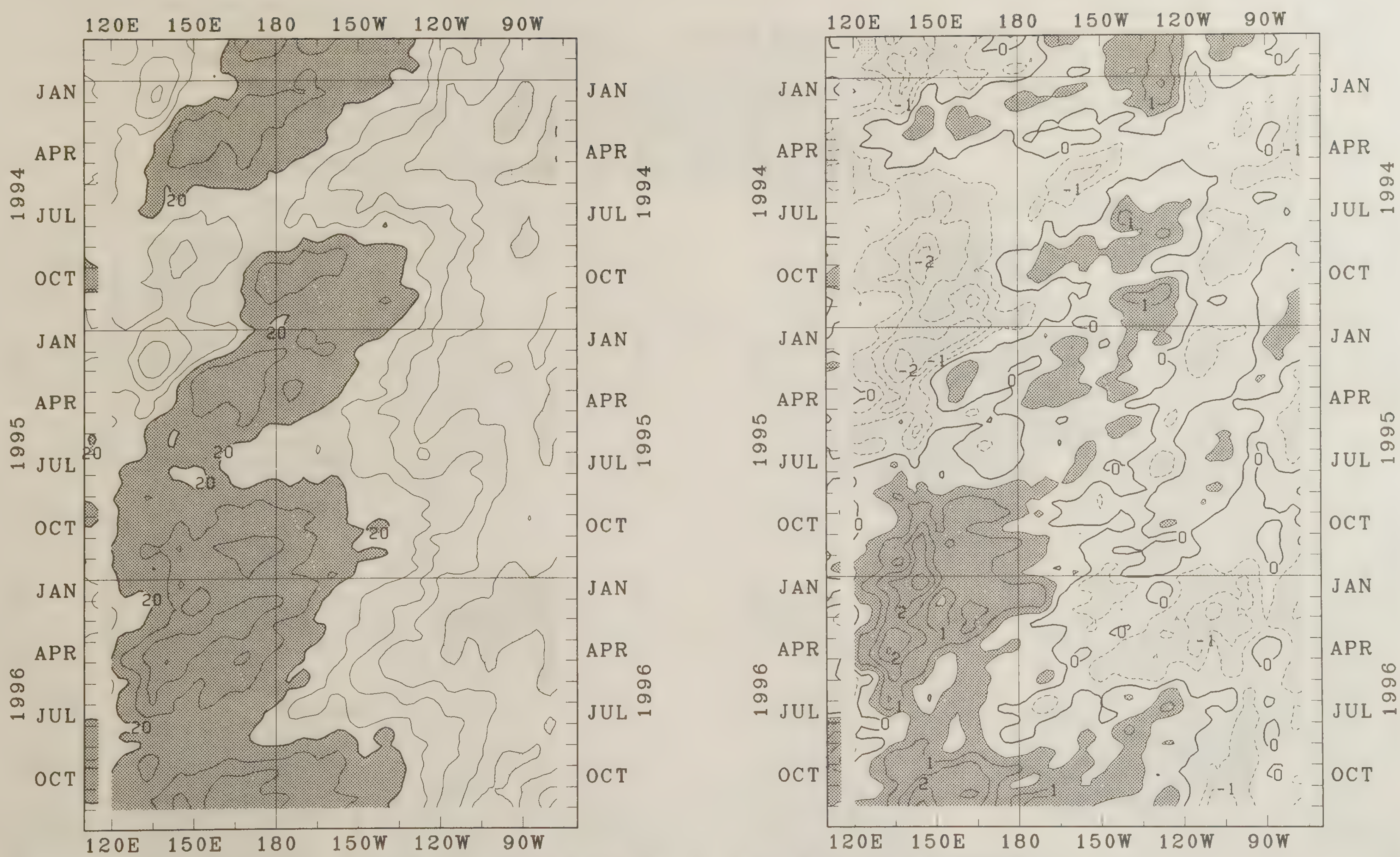
Time–Longitude Section of Depth of 20℃ & Anomalies (Eq.)



第16図　太平洋の赤道に沿う20℃深度（左）及び偏差（右）の時間－経度断面図

Fig.16 Time-longitude sections of depth of the 20°C isotherm along the equator (left) and anomalies (right) in the Pacific Ocean. Data are derived from the Ocean Data Assimilation System of JMA. Contour interval is 10m. Values in left panel greater than 150m are shaded and values less than 50m are spotted. Dashed contours in right panel indicate negative anomalies. Anomalies are computed from 1987-1995 base period means.

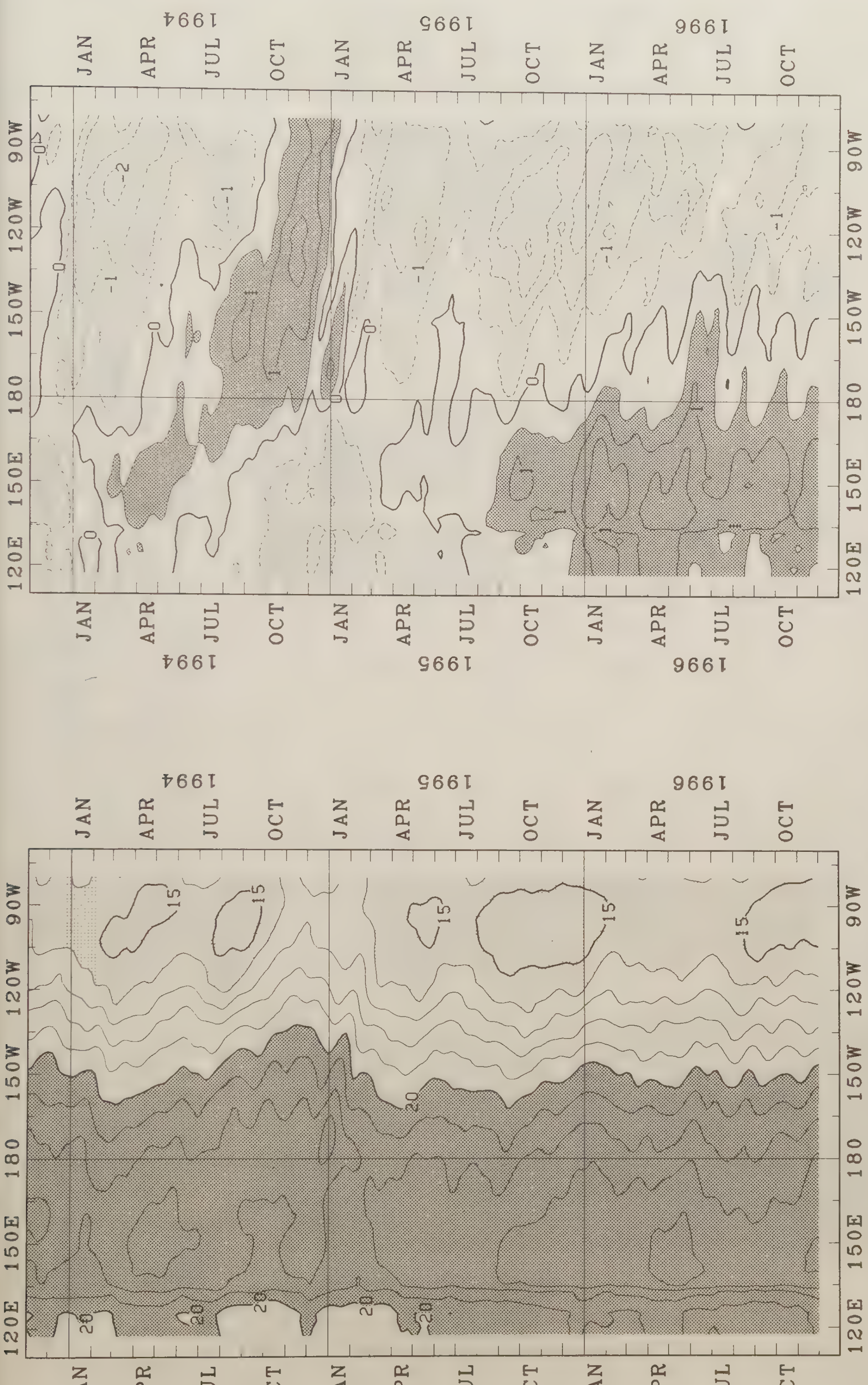
Time-Longitude Section of Ocean Heat Content & Anomalies (6°N)



第17図　太平洋の北緯6度線に沿う海洋表層の貯熱量（左）及び偏差（右）の時間－経度断面図

Fig.17 Time-longitude sections of ocean heat content in the upper 260m along 6°N (left) and anomalies (right) in the Pacific Ocean. Data are derived from an Ocean Data Assimilation System of JMA. Contour interval is 1°C (left) and 0.5°C (right). Values in the left panel greater than 20°C are shaded and values less than 16°C are spotted. Dashed contours in right panel indicate negative anomalies. Anomalies are computed from 1987-1995 base period means.

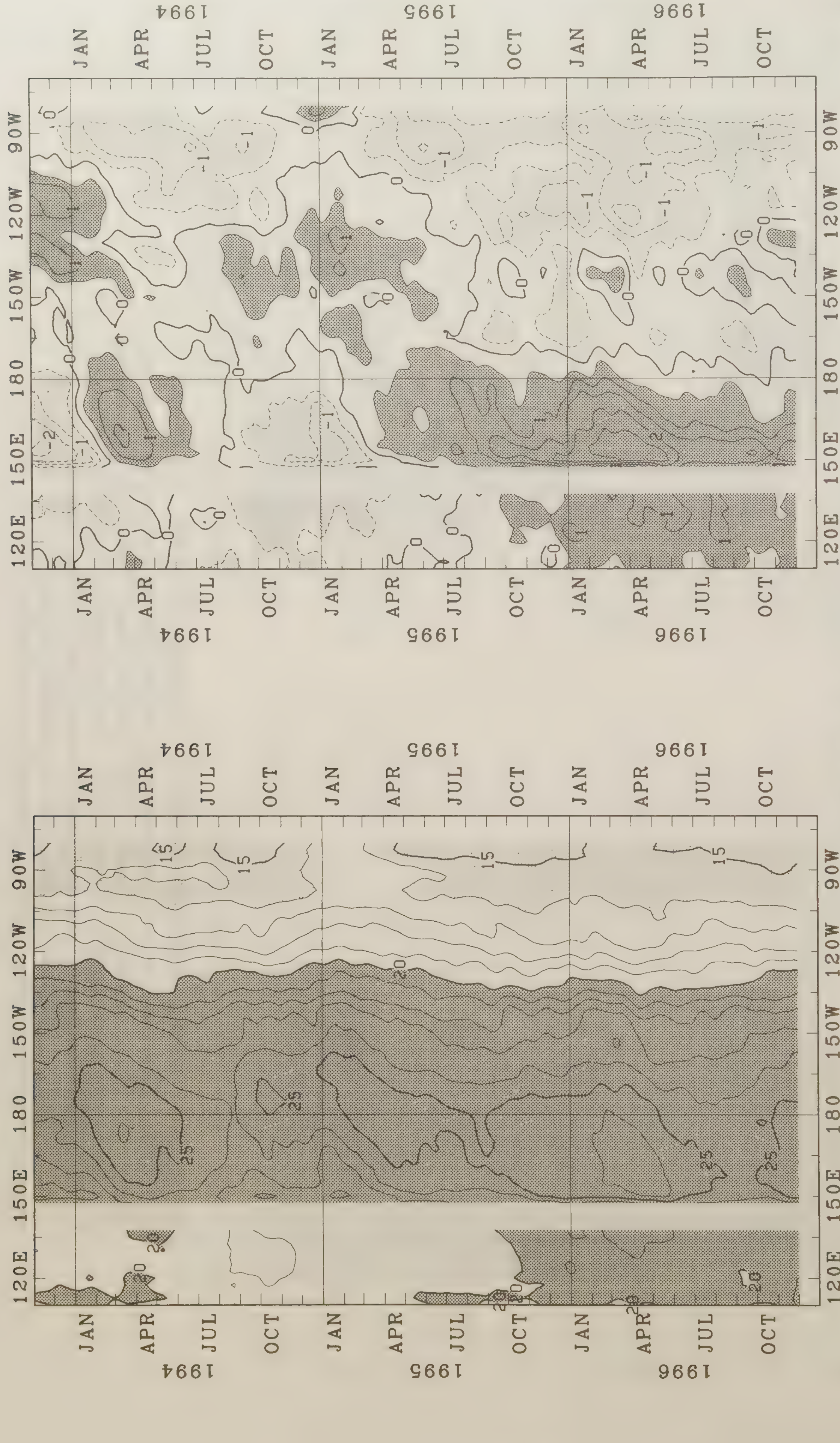
Time–Longitude Section of Ocean Heat Content & Anomalies (Eq.)



第18図　太平洋の赤道に沿う海洋表層の貯熱量（左）及び偏差（右）の時間－経度断面図

Fig.18 Time-longitude sections of ocean heat content in the upper 260m along the equator (left) and anomalies (right) in the Pacific Ocean. Data are derived from the Ocean Data Assimilation System of JMA. Contour interval is 1°C (left) and 0.5°C (right). Values in the left panel greater than 20°C are shaded and values less than 16°C are spotted. Dashed contours in right panel indicate negative anomalies. Anomalies are computed from 1987-1995 base period means.

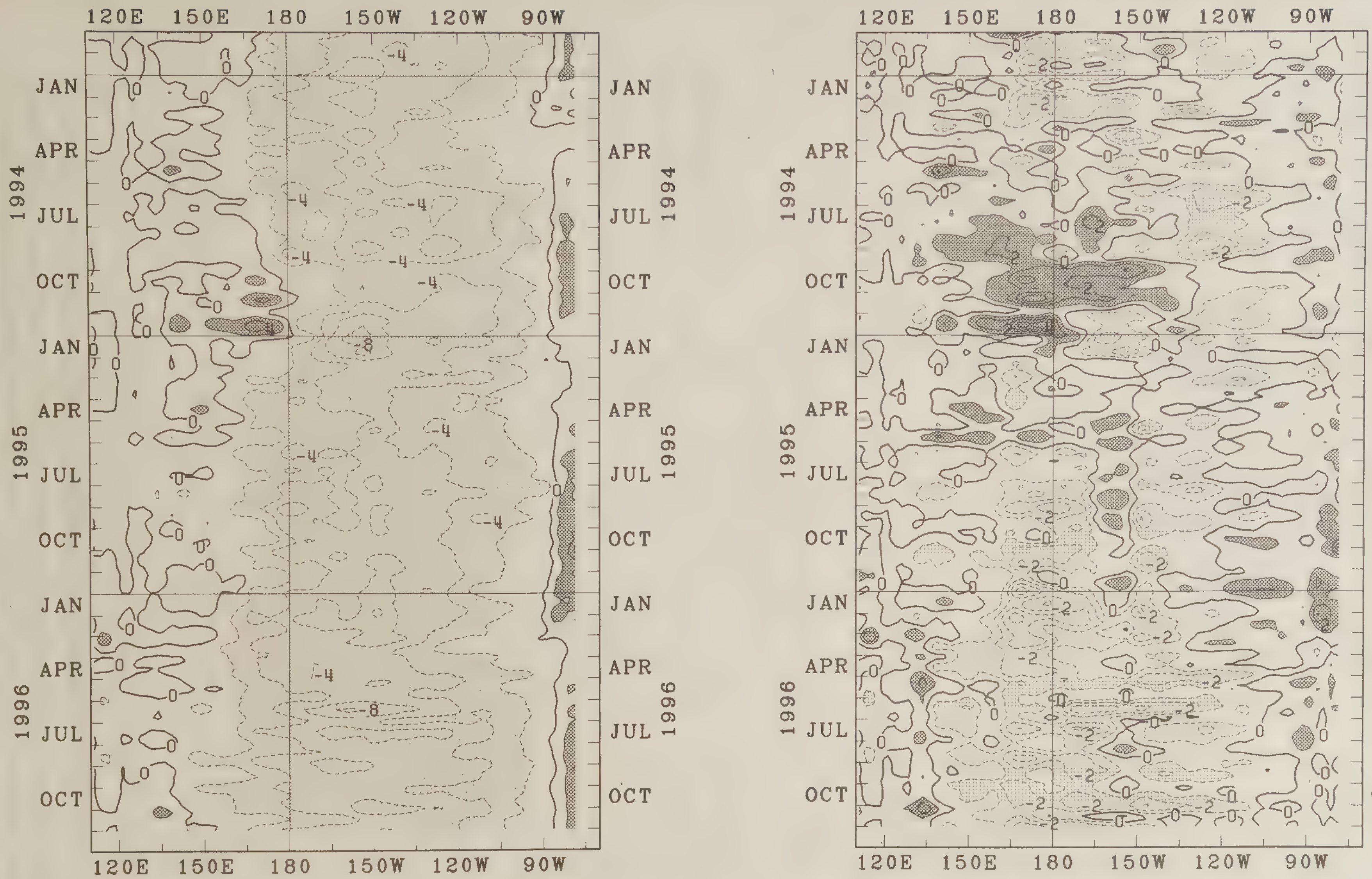
Time–Longitude Section of Ocean Heat Content & Anomalies (6°S)



第19図　太平洋の南緯6度線に沿う海洋表層の貯熱量（左）及び偏差（右）の時間－経度断面図

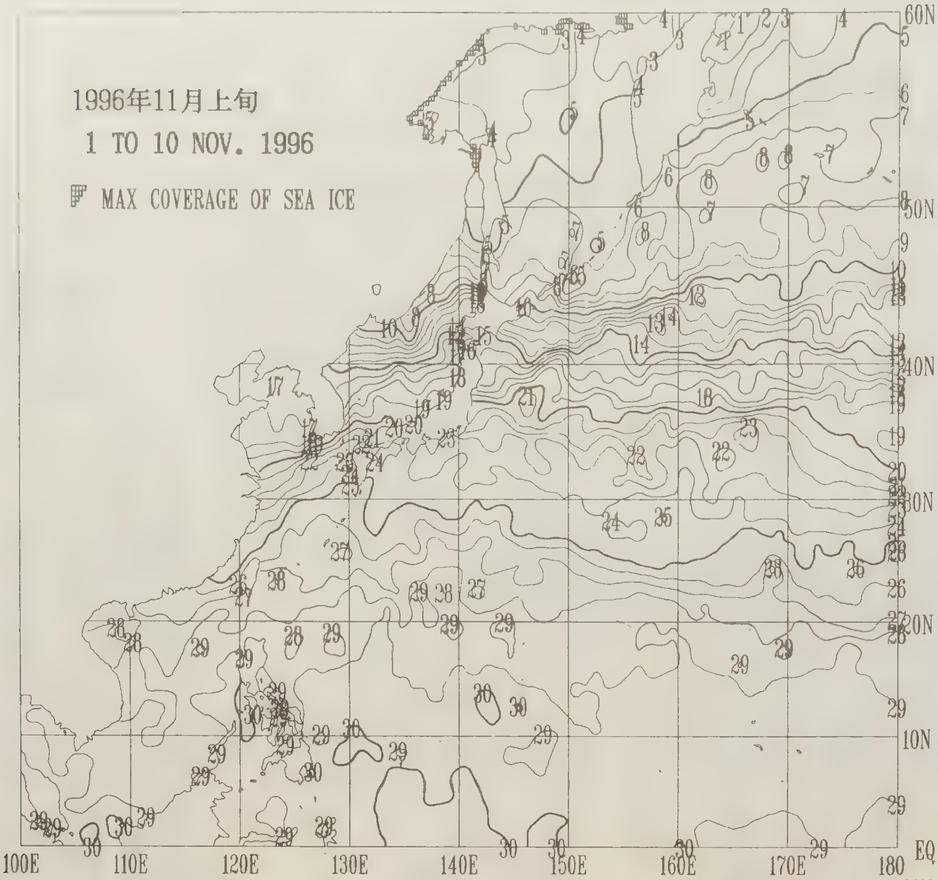
Fig.19 Time-longitude sections of ocean heat content in the upper 260m along 6°S (left) and anomalies (right) in the Pacific Ocean. Data are derived from the Ocean Data Assimilation System of JMA. Contour interval is 1°C (left) and 0.5°C (right). Values in the left panel greater than 20°C are shaded and values less than 16°C are spotted. Dashed contours in right panel indicate negative anomalies. Anomalies are computed from 1987-1995 base period means.

Time-Longitude Section of Surface Zonal Wind Stress & Anomalies (Eq.)



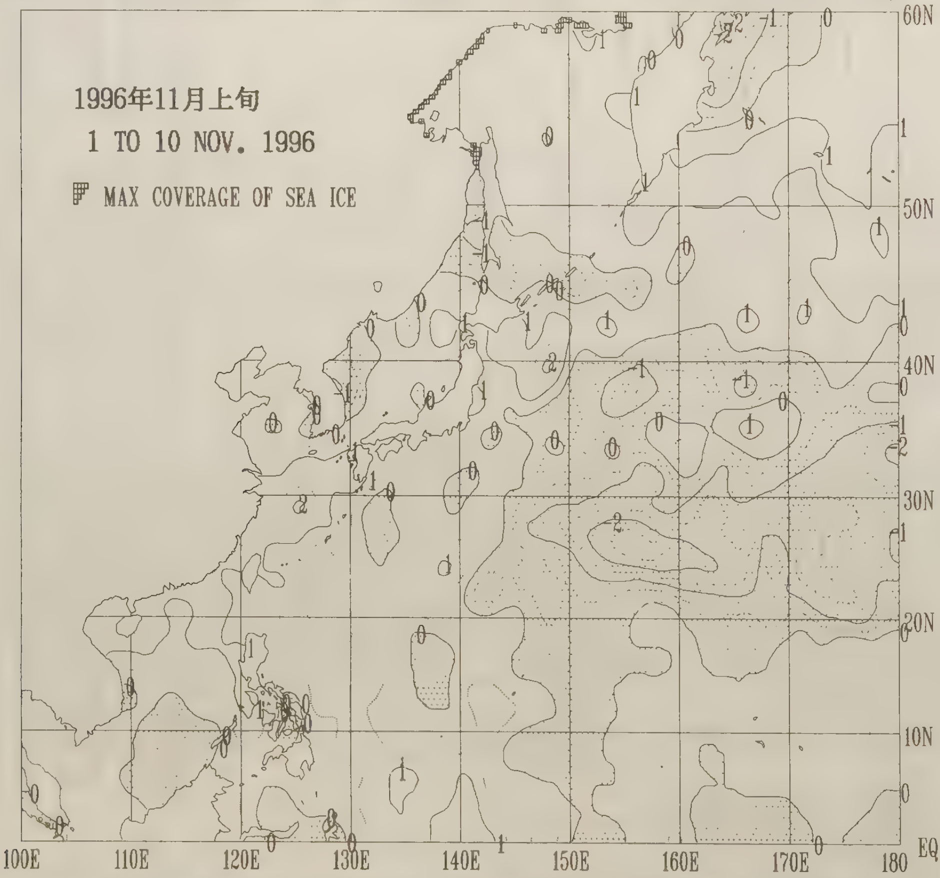
第20図　太平洋の赤道に沿う海面の風応力の東西成分（左）及び偏差（右）の時間－経度断面図

Fig.20 Time-longitude sections of surface zonal wind stress along the equator (left) and anomalies (right) in the Pacific Ocean. Data are derived from the Atmospheric Global Data Assimilation System of JMA. Contour interval is 0.02N/m2 (left) and 0.01N/m2 (right). Dashed contours indicate easterlies (left) and easterly anomalies (right). Anomalies are computed from 1987-1995 base period means.



旬平均沿岸水温(℃)
Coastal Water Temperature

地点名 (Index Number)	水温 Temp.	偏差 Anom.
石　垣(47918)	26.3	1.3
御前崎(47655)	20.2	1.3
八丈島(47678)	23.4	0.7
小名浜(47598)	18.9	1.4
宮　古(47585)	16.0	0.2
江　差(47428)	14.1	-
浜　田(47755)	20.5	-



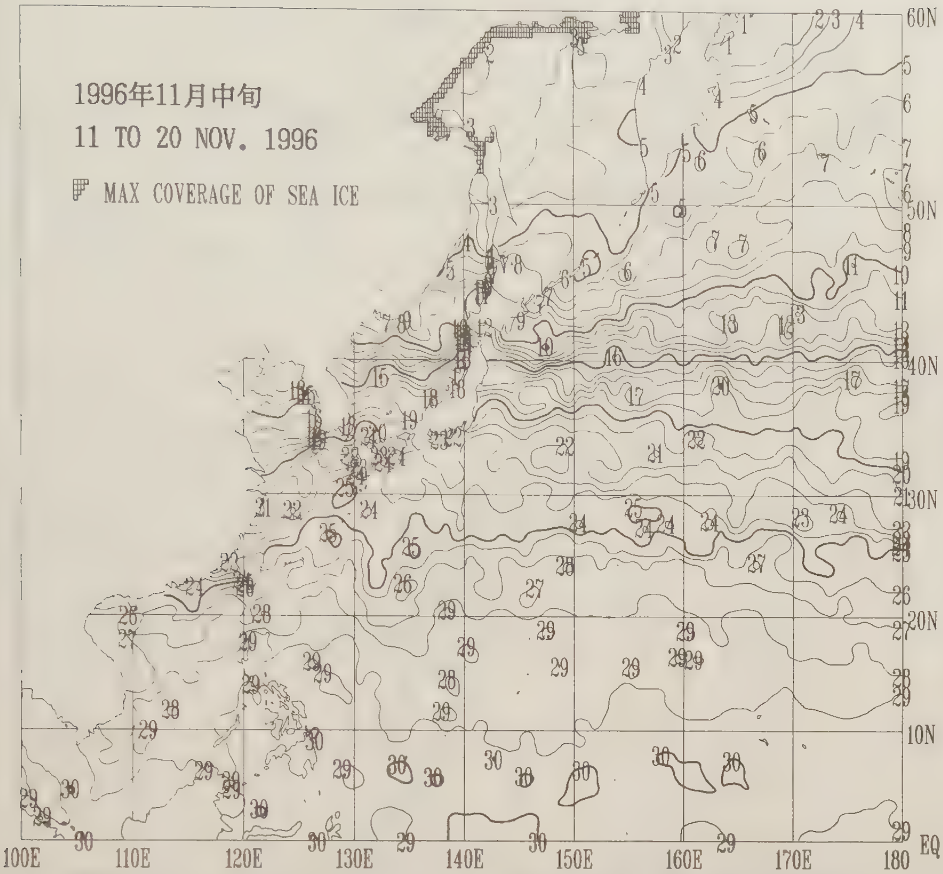
海洋気象ブイロボット
旬平均海面水温(℃)
Ocean Data Buoy SST

日本海	37.9N,134.5E	18.8
四国沖	29.0N,135.0E	25.5
東シナ海	28.2N,126.3E	25.5

第21図 北西太平洋旬平均海面水温図(上)及び偏差図(下)(1996年11月上旬)

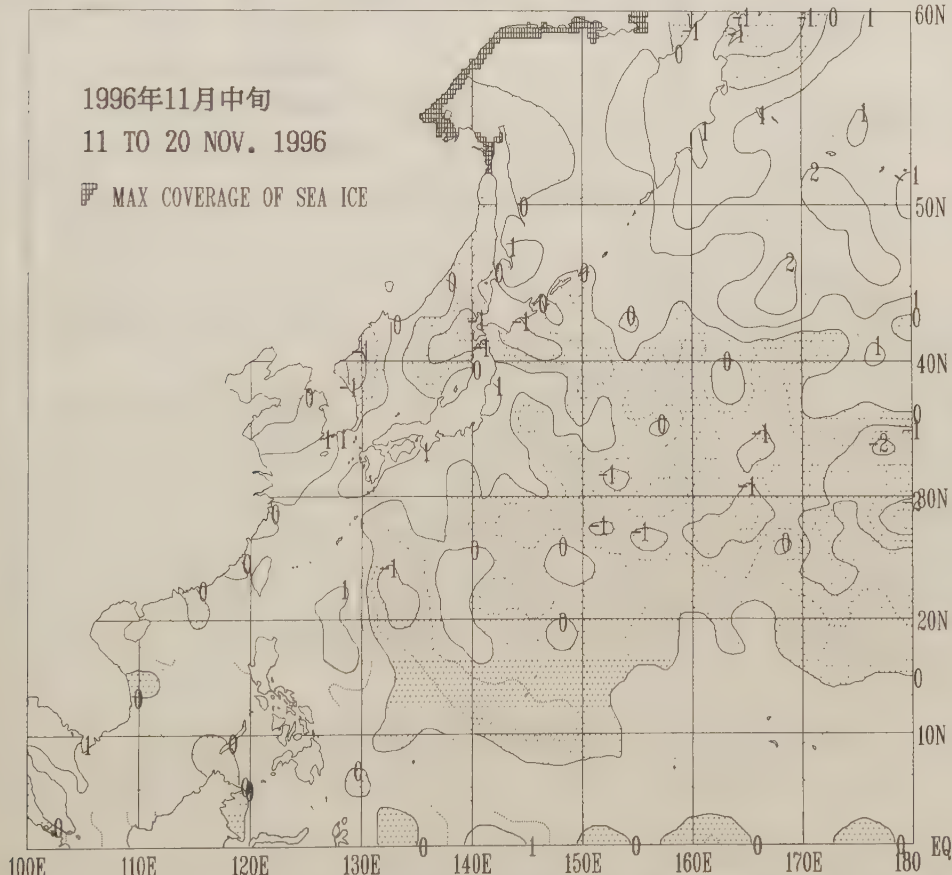
Fig.21 Ten-day mean SSTs in the western North Pacific (top) and anomalies (bottom) for the 1st ten-day period in NOV 1996. Anomalies are computed from the JMA climatology (1961-90). Contour interval is 1°C and additional anomaly contours of 0.5°C are shown as broken lines. Negative anomalies are spotted.

Ten-day mean SST & Anomalies



旬平均沿岸水温(℃)
Coastal Water Temperature

地点名 (Index Number)	水温 Temp.	偏差 Anom.
石　垣(47918)	25.0	0.7
御前崎(47655)	18.0	0.7
八丈島(47678)	21.8	0.0
小名浜(47598)	17.6	1.4
宮　古(47585)	14.7	-0.2
江　差(47428)	10.2	-
浜　田(47755)	18.4	-

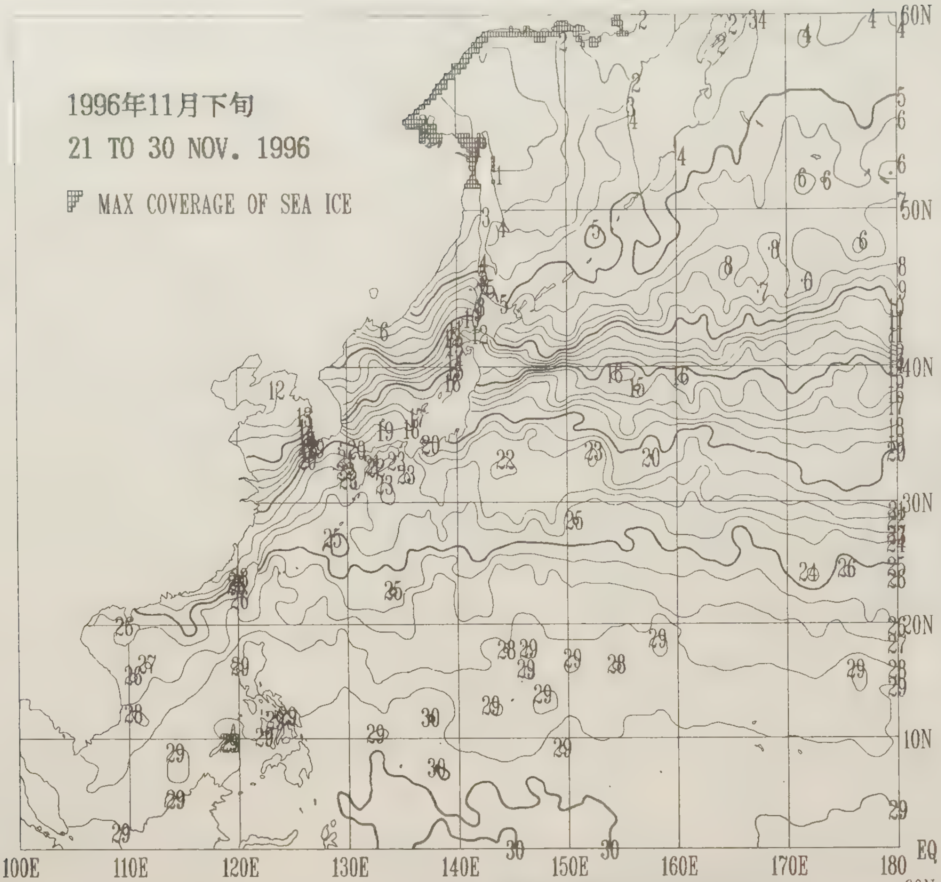


海洋気象ブイロボット
旬平均海面水温(℃)
Ocean Data Buoy SST

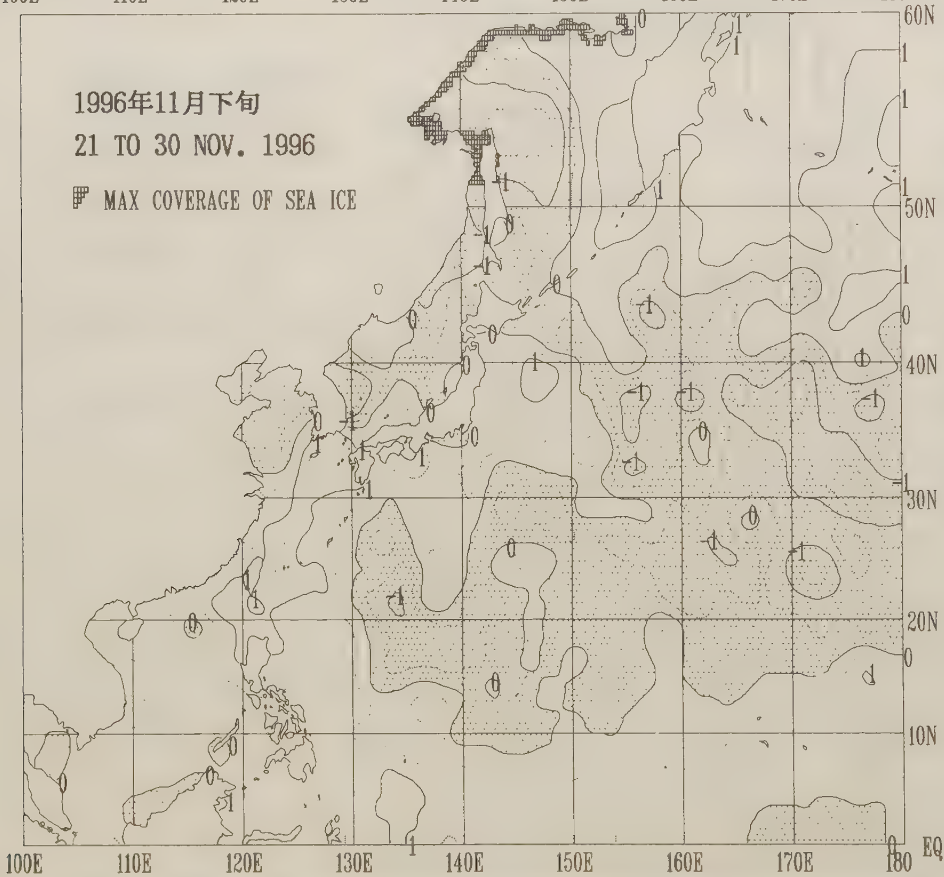
日本海	37.9N,134.5E	18.5
四国沖	29.0N,135.0E	24.8
東シナ海	28.2N,126.3E	24.7

第22図 北西太平洋旬平均海面水温図(上)及び偏差図(下)(1996年11月中旬)

Fig.22 Ten-day mean SSTs in the western North Pacific (top) and anomalies (bottom) for the 2nd ten-day period in NOV 1996. Anomalies are computed from the JMA climatology (1961-90). Contour interval is 1°C and additional anomaly contours of 0.5°C are shown as broken lines. Negative anomalies are spotted.



旬平均沿岸水温(℃) Coastal Water Temperature		
地点名 (Index Number)	水温 Temp.	偏差 Anom.
石　垣(47918)	24.6	1.4
御前崎(47655)	16.8	0.9
八丈島(47678)	20.3	-0.6
小名浜(47598)	16.3	1.3
宮　古(47585)	13.0	-0.7
江　差(47428)	10.7	-
浜　田(47755)	18.0	-

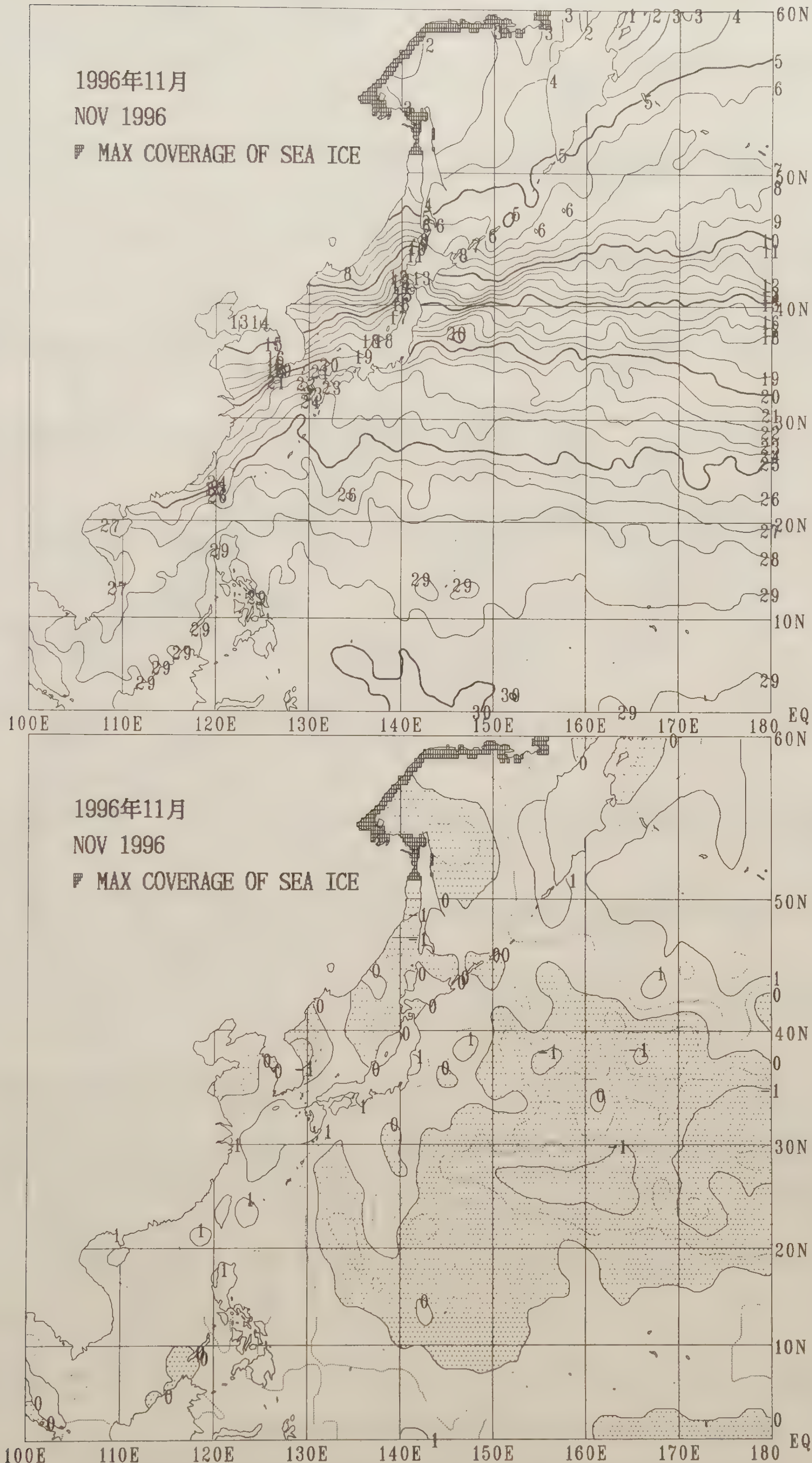


海洋気象ブイロボット
旬平均海面水温(℃)
Ocean Data Buoy SST

日本海	37.9N,134.5E
	16.7
四国沖	29.0N,135.0E
	23.9
東シナ海	28.2N,126.3E
	24.0

第23図 北西太平洋旬平均海面水温図(上)及び偏差図(下)(1996年11月下旬)

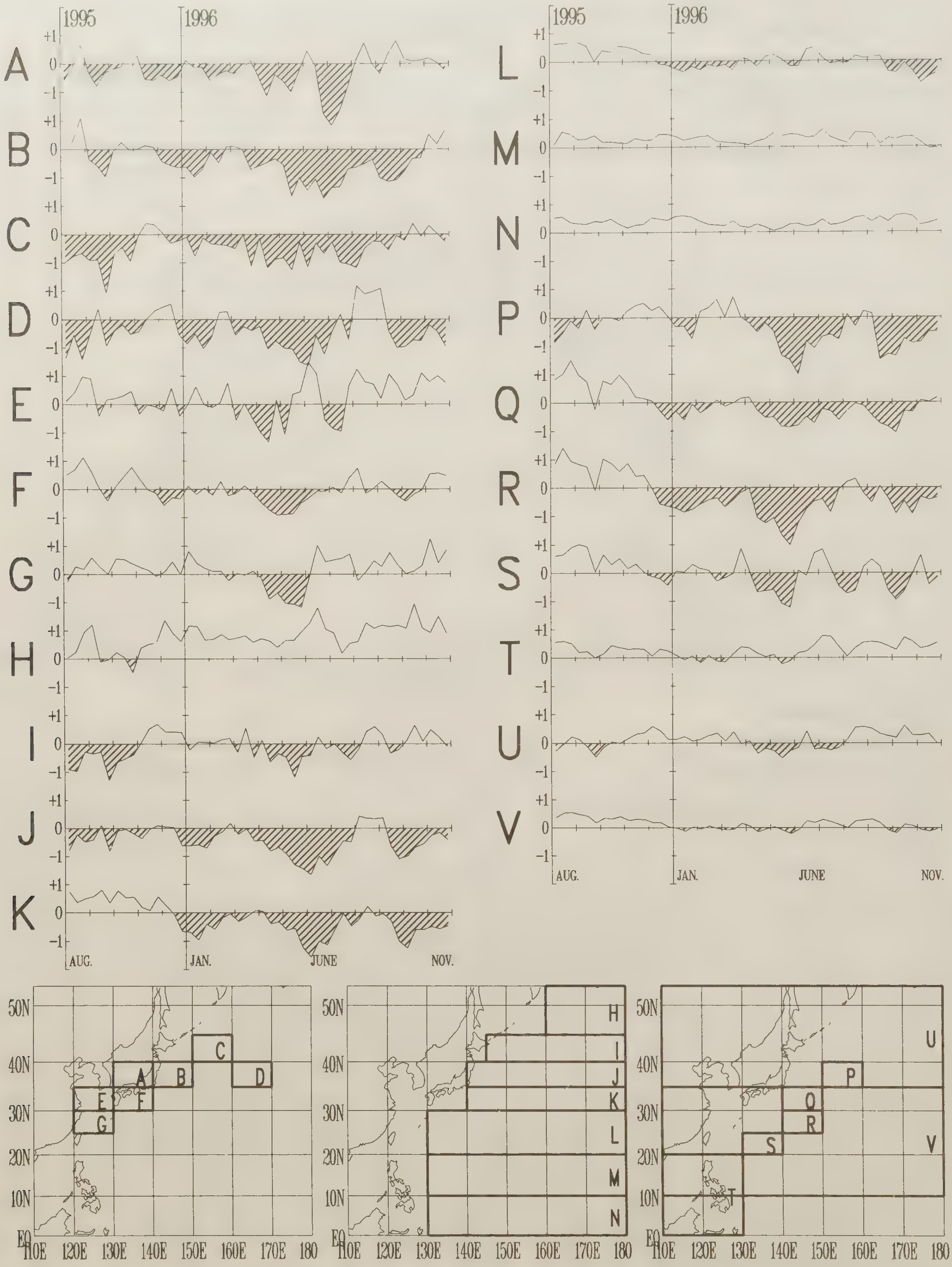
Fig.23 Ten-day mean SSTs in the western North Pacific (top) and anomalies (bottom) for the 3rd ten-day period in NOV 1996. Anomalies are computed from the JMA climatology (1961-90). Contour interval is 1°C and additional anomaly contours of 0.5°C are shown as broken lines. Negative anomalies are spotted.



第24図 北西太平洋月平均海面水温図(上)及び偏差図(下)(1996年11月)

Fig.24 Monthly mean SSTs in the western North Pacific (top) and anomalies (bottom) for NOV 1996. Anomalies are computed from the JMA climatology (1961-1990). Contour interval is 1°C and additional anomaly contours of 0.5°C are shown as broken lines. Negative anomalies are spotted.

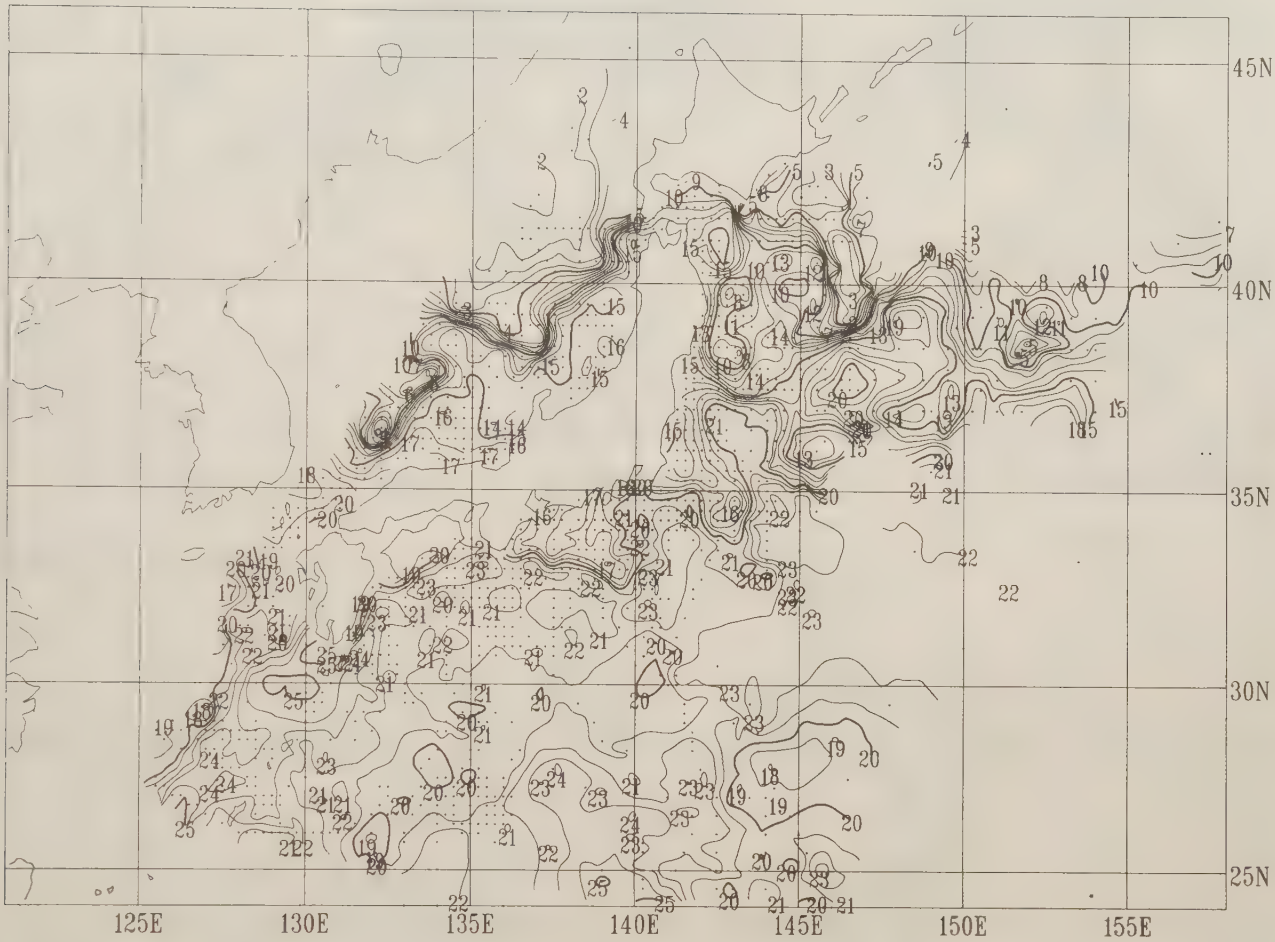
Time Series of Area Mean SST in the Western North Pacific



第25図　北西太平洋旬平均海面水温平年偏差時系列図

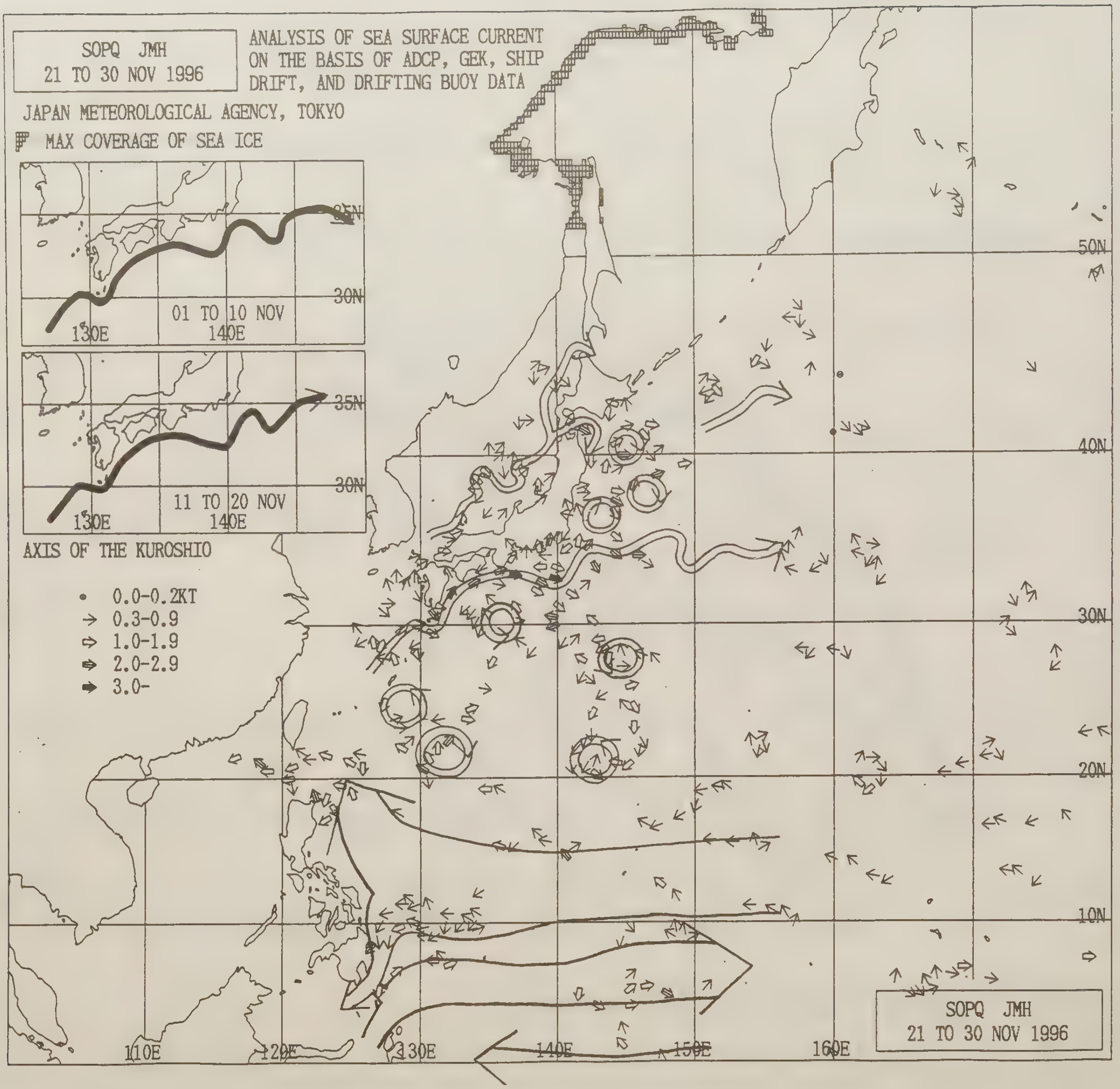
Fig.25 Time series of the ten-day mean sea surface temperature anomalies (°C) in the western North Pacific for the areas indicated at the bottom. Negative anomalies are shaded. Anomalies are computed from the JMA climatology (1961-90).

100m Temperatures in Seas Adjacent to Japan



第26図　日本近海表層水温(深さ100m)図 (1996年11月)

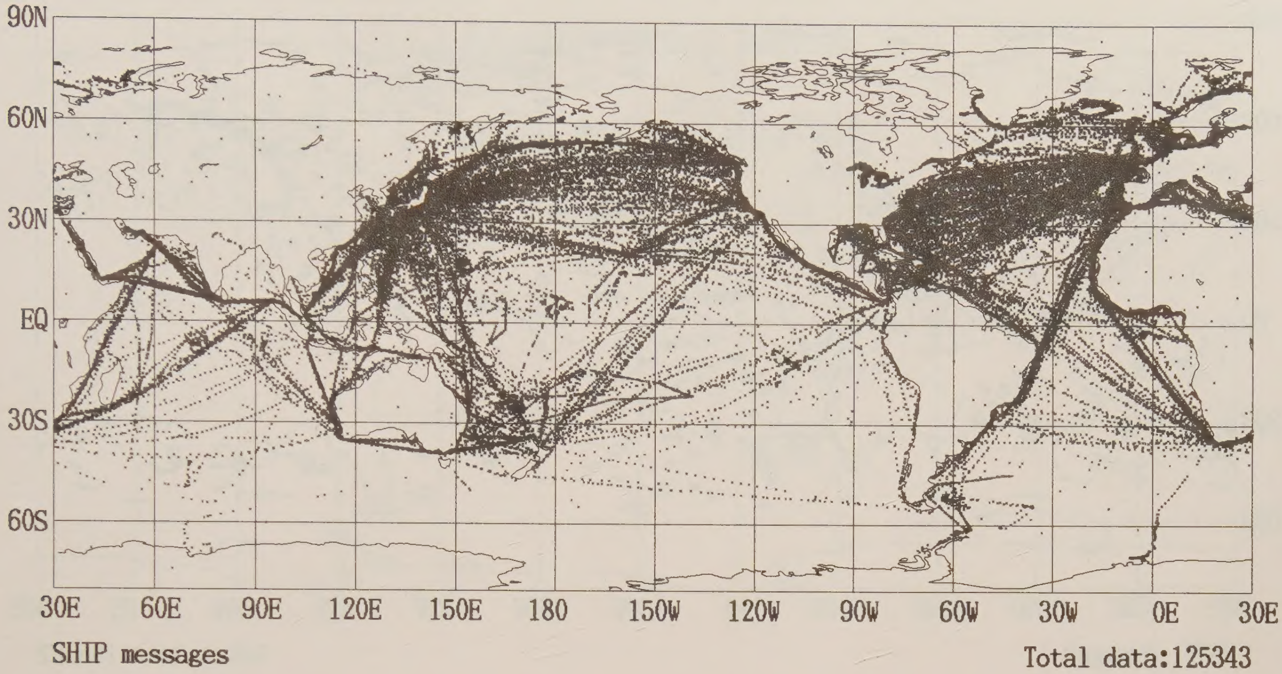
Fig.26 Subsurface (100m) temperatures in seas adjacent to Japan for NOV 1996. Contour interval is 1°C. Observation points are denoted by dots.

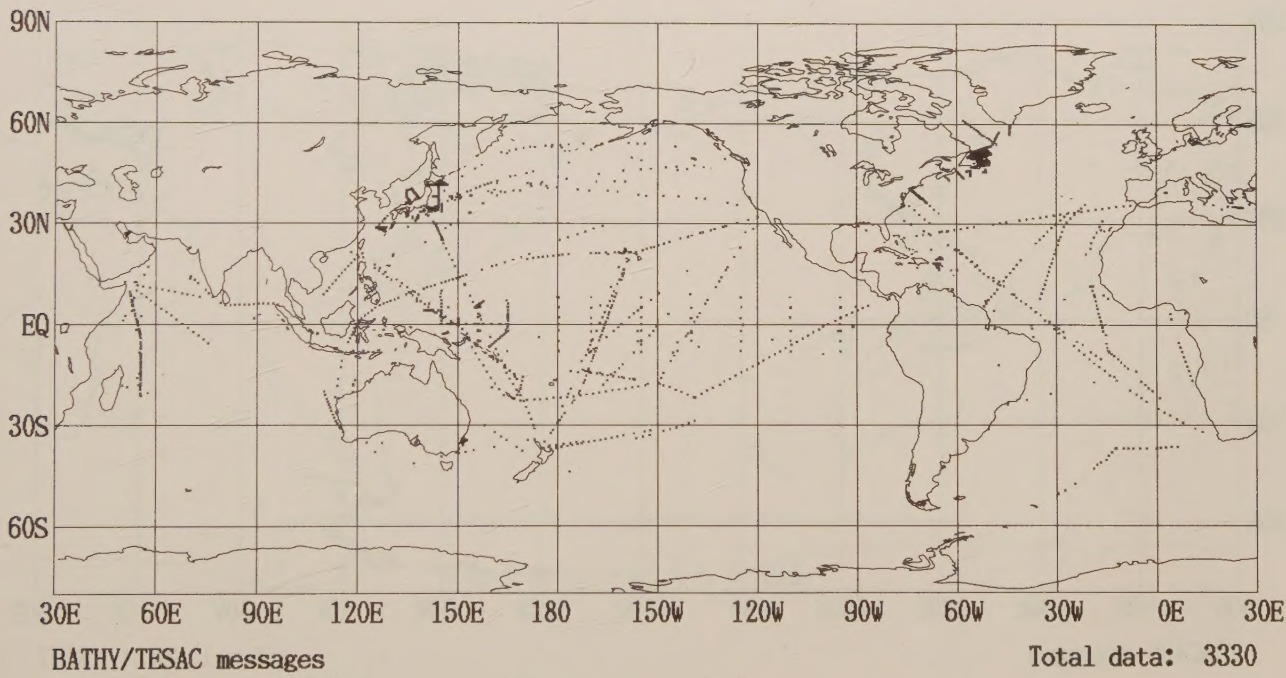


第27図　北西太平洋海流図（1996年11月下旬）

Fig.27 Analysis of the sea surface current in the western North Pacific for the 3rd ten-day period in NOV 1996. Small arrows indicate sea surface currents measured with acoustic Doppler current profilers, GEKs deployed in research vessels, and ship drift by merchant ships/drifting buoys during the month. Major currents such as the Kuroshio and the North Equatorial Current are denoted by larger open arrows.

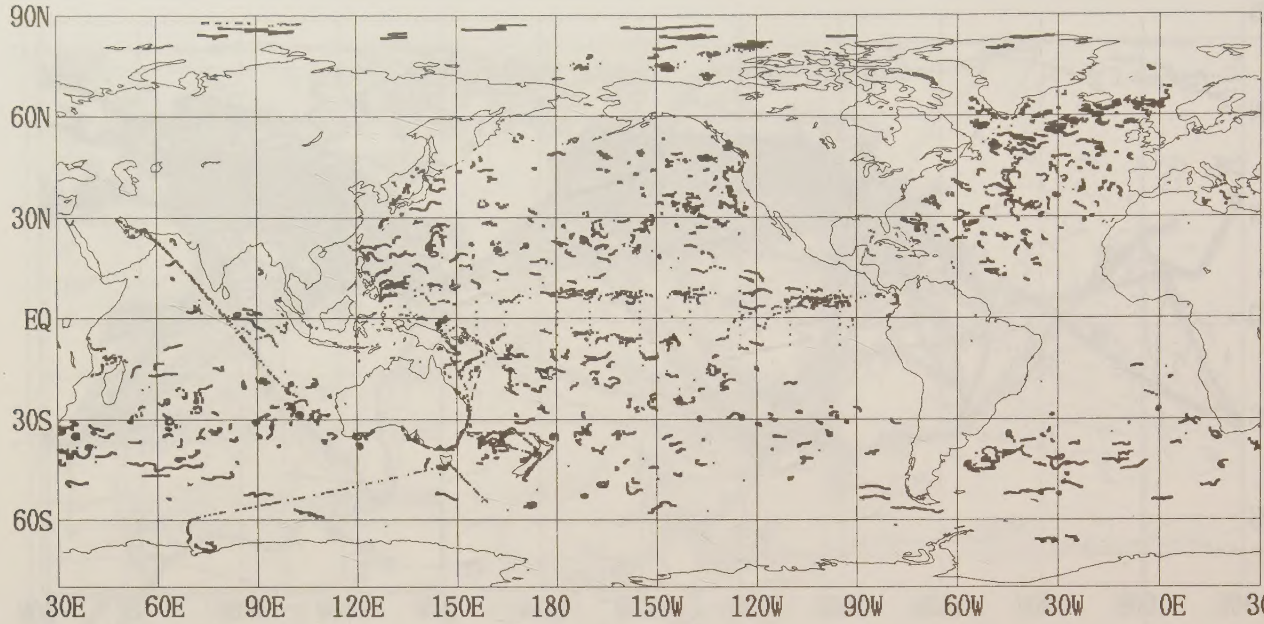
Geographical Distribution of Oceanographic Data



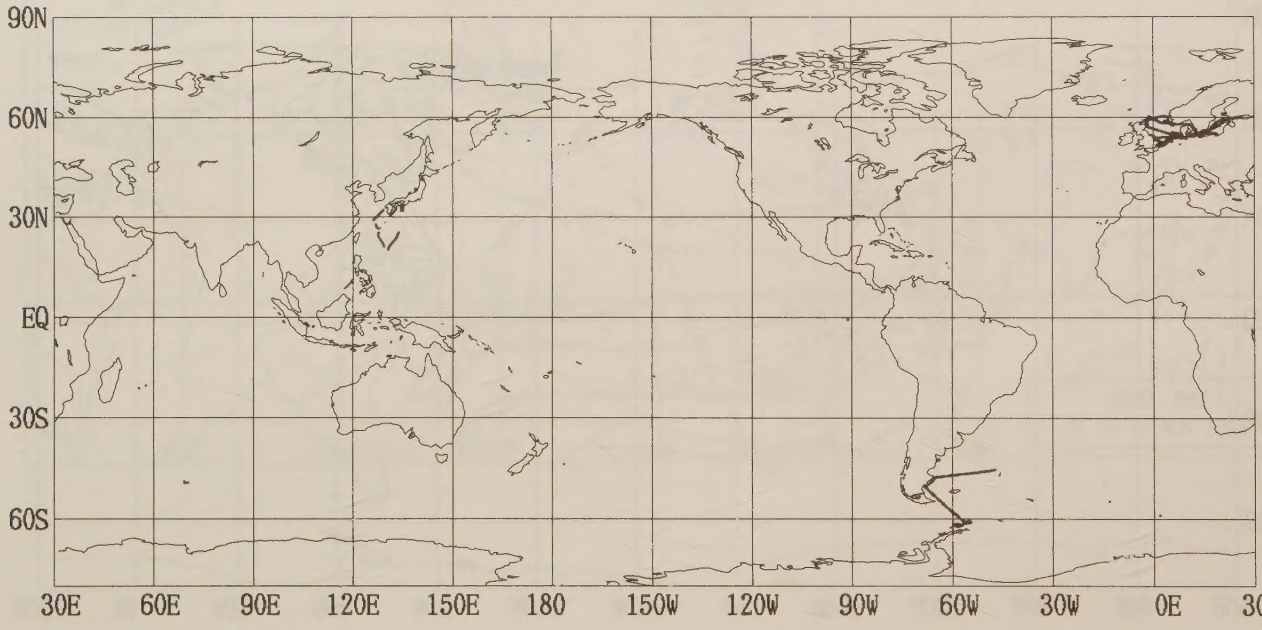


第28-1図　測点分布図(1996年11月)

Fig.28-1 Geographical distribution of SHIP messages (SST data, top) and BATHY/TESAC messages (subsurface temperature data, bottom) for NOV 1996.



BUOY messages Total data:188392



TRACKOB messages Total data: 3177

第28-2図　測点分布図(1996年11月)

Fig.28-2 Geographical distribution of BUOY messages (buoy drift and SST data, top) and TRACKOB messages (ship drift and SST data, bottom) for NOV 1996.

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